Visualising Young Children's Play: Exploring Multimodal Transcription of Video-recorded Interaction

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I, Kate Cowan, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

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Abstract

This thesis considers child-initiated play from a multimodal social semiotic perspective, giving close attention to the ways in which children collaboratively make meaning in play in a multitude of ways. Such a perspective resists instrumental, developmental perspectives on play, and comes at a time when play-based approaches are in tension with increasingly formalised learning agendas and changes to early years assessment.

In order to explore the multimodality of child-initiated play, apt theories and research methods are necessary for attending to the ways children make meaning in multiple modes. The study consists of video-based observations of child-initiated play collected through an ethnographic, teacher-research case study carried out in a nursery school in England. A particular challenge in multimodal research is developing forms of transcription which account for multiple modes in fine-grained detail, with the conventions developed for transcribing language proving insufficient. This thesis presents four multimodal transcript designs as analytic devices that bring multimodal aspects of play to the fore, and critically discusses the gains and losses of each multimodal transcript.

The multimodal transcripts highlight the richness and complexity of child-initiated play *as* learning, making visible ways in which children's play is complex, layered, transformative, creative and agentive meaning-making. This thesis proposes that multimodal transcription not only 'visualises' play by making it visible and sharable, but also offers a new lens through which we might understand the semiotic complexity of play. Through interwoven substantive and methodological strands, this thesis therefore offers a contribution towards the tools and dispositions necessary for recognising and valuing meaning-making in play, in early years research methodology, educational theory and practice.

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Introduction

This thesis considers child-initiated play from a multimodal social semiotic perspective, paying close attention to the ways in which children collaboratively make meaning in their play in a multitude of ways. It builds on a long tradition of play theory and research in early childhood education, and comes at a time when play-based approaches are in tension with increasingly formalised learning agendas and changes to early years assessment. In order to explore the multimodality of child-initiated play, apt theories and research methods are necessary for attending to the complex ways children make meaning in multiple modes. In addition to its substantive focus, this work therefore aims to make a methodological contribution to multimodality, adding to the body of research that challenges the presumed centrality of speech and writing in learning. Specifically, this study critically examines the affordances of diverse approaches to the multimodal transcription of video data of young children's play.

This doctorate was part of the National Centre for Research Methods (NCRM) Phase 3 node 'MODE: Multimodal Methodologies for Researching Digital Data and Environments', funded by the Economic and Social Research Council (ESRC). The NCRM was established by the ESRC in 2004 to increase the quality and range of methodological approaches used by UK social scientists, and to drive forward methodological development and innovation through its research. Directed by Professor Carey Jewitt at UCL Knowledge Lab and running from 2011-2015, MODE's focus was to develop multimodal methodologies for social scientists, providing systematic ways to investigate all modes of representation and communication when working with digital media and materials (MODE, 2017).

The work of MODE, and my own study, is relevant given the increasing prevalence of digital technologies in society, and the particular challenges and opportunities they present to social scientists. The aim of MODE was therefore to develop innovative multimodal methods apt for working with new types of data, such as digital video, and analysing multiple modes in digital texts.

MODE focused on five thematic strands:

- Multimodal Theories and Methods
- Video and Other Digital Data
- Multimodal Transcription
- Researching Space, Place and Time
- Technology and Embodiment

My doctorate has resonances with all five strands but has particular connections with the theme 'Video and Other Digital Data', which considered how to gather materials such as video-

recordings and how to systematically analyse these using multimodal methodologies. This thesis is strongly connected to the thematic strand 'Multimodal Transcription', which considered how digital data could be represented in different modes and media in research outputs. As it is problematic to 'do methods' in isolation, MODE's themes have been addressed in the context of substantive research areas, including this thesis and other projects examining learning in the early years (see Price, 2013; Crescenzi, Jewitt, & Price, 2014; Flewitt, Kucirkova, & Messer, 2014; Sakr, Jewitt, & Price, 2014).

Rationale

Transcription of digital video presents particular challenges, and is increasingly an area of experimentation and innovation in social research. Transcription conventions developed for speech prove problematic for representing the dynamic, multimodal qualities of video, with the existing methods and means no longer fit for purpose. Just as the technology of the tape recorder supported developments in transcription to represent the new linguistic data available (for example, phonetics and Conversation Analysis), so it becomes necessary to continue the discussion of transcription in light of the technology of the video camera, drawing upon existing approaches and considering innovation in the representation and analysis of visual, spatial and temporal video records. Without such attention, the significance of multimodal meaning-making risks being overlooked or dismissed.

The challenges and possibilities of transcribing video first became an area of interest to me during my MEd research (Cowan, 2010) when I collected video recordings of children playing and creating with natural materials in a nursery school context. Transcribing gaze, facial expressions and manipulation of objects alongside talk and its features proved a challenging aspect of analysis and dissemination. I initially aimed to transcribe 'wholly and verbatim', as is typically recommended in social science for strengthening validity and reliability (MacLean, Meyer, & Estable, 2004; Seale & Silverman, 1997; Wengraf, 2001). Through my MEd research I became interested in the children's multimodal communication and attempted to represent it in orthographic transcripts, often leading to lengthy written descriptions alongside the reported speech, for example:

> *(Meg moves the pine cone using her left hand, making sound effects as it moves).*
> Meg: Boom, boom, ahhh!
> *(Moving it up and down against the ground in jumping motion, she then lifts it clear to the other side of her arrangement and smiles).* (Cowan 2010, p. 75).

However, I noted the challenges such an approach raised:

> The physical behaviours of the children, such as eye-gaze and handling of the objects, were to a large extent 'untranscribable' and so often required descriptive additions in brackets … However, the subtlety and authenticity of these behaviours are invariably distorted when transcribed in a written mode. (Cowan 2010, pp. 36-37)

Having grappled with these issues in my past academic work, in this present study I examine theoretical perspectives on transcription, critically reflecting on conventions and innovations in transcribing video, and considering what innovatory insights, if any, multimodal approaches might offer. This thesis investigates the 'distortion' I previously experienced in transcription and takes issue with my earlier assumption that certain behaviours are necessarily 'untranscribable'. Instead, this study critically considers the gains and losses entailed in all transcription and seeks to develop forms of transcription that might more adequately represent multimodal aspects of play than written accounts.

Given my MEd research background and my experience working as a nursery teacher (2008-2012), this doctoral research focuses on early years education, in particular on child-initiated play. The nursery offers an interesting research site due to its typically free-flow learning environment, the range of child-initiated, play-based activities routinely engaged in and the context this offers for children to readily draw upon multiple modes of representation (for instance, construction, mark-making, movement and language). Research in this area is particularly timely, as debates continue about the place of play in an early years system which is increasingly concerned with assessment, performativity and school-readiness (Ball, 2008; Dahlberg, Moss, & Pence, 1999; Roberts-Holmes & Bradbury, 2016; Whitebread & Bingham, 2012). This study is therefore framed by a wider discourse contesting the neoliberal construction of early years education, reflecting critically on developmental approaches to play-based learning and the pedagogization of play.

Aims and Research Questions

This research aims to advance multimodal methodologies by considering the issue of multimodal transcription when investigating child-initiated play. The study's substantive and methodological aims are therefore intertwined, with a multimodal social semiotic perspective on child-initiated play requiring apt multimodal research methods.

The first research question addressed by the study is:

- How might multimodal social semiotic theory offer new ways of seeing and understanding child-initiated play?

This question arises primarily from the substantive focus of the study, seeking to examine in detail the ways in which children's play unfolds through their interaction with each other and a range of artefacts. 'Child-initiated play' is taken to mean playful self-chosen activities undertaken by children without adult direction (Bayley & Featherstone, 2013). Such activity is sometimes termed 'free play', although it is recognised that even when play appears to be free or highly

child-led, it is likely to be controlled by adults in various ways through decisions such as permitted times for play, resources provided, layout of play spaces, the rules of the setting, and so on. Siraj-Blatchford suggests that "the notion of a totally 'free' play environment is really a myth" (2014, p. 174), with pedagogical aims shaping children's play in variously implicit or explicit ways (Bernstein, 1975).

Child-initiated play is often positioned on a continuum from highly child-directed to highly adult-directed (Wood, 2010a). Both terms are used in the Early Years Foundation Stage, giving rise to tensions discussed in Chapter One, with most early years practice adopting some middle-ground such as 'child-initiated and adult-extended' play (Siraj-Blatchford, Sylva, Muttock, Gilden, & Bell, 2002), 'playful pedagogies' (Broadhead, Wood, & Howard, 2010) or 'integrated approaches' (Wood, 2010a). For the purposes of this study, the role of adult interaction in play is not specifically examined, although it is recognised to be an important feature of current early years pedagogy. The choice to focus on child-initiated play enables a close consideration of children's meaning-making in a range of forms and materials, placing particular attention on moments which are not positioned as direct acts of 'teaching', and so may not typically be given particular attention in early years settings.

As a socially constructed concept, play has been defined and positioned in various ways over time, with a particularly pedagogised perspective embodied in England's current early childhood education curriculum. A fine-grained multimodal social semiotic perspective on child-initiated play, outlined in Chapter Two, seeks to understand in greater detail how play is organised and meaningful to children themselves, against a background of on-going discussion about the place of play in early childhood education and a dominant discourse of 'learning through play'.

The second research question addressed by the study is:

- How might video and multimodal transcription offer new ways of seeing and understanding child-initiated play?

This question reflects the methodological aims of the study and the overall aim of the MODE project to advance multimodal methodologies by considering the potentials and challenges of transcribing and analysing video in social research. Video is increasingly used as a research tool in the social sciences, and offers particular potentials for multimodal methodologies (Jewitt, 2012). However, video has been relatively 'methodologically neglected' (Kissmann, 2009) requiring on-going examination of its potentials and constraints in research. One key area is the challenge of transcribing video, including the potentially problematic issue of transcribing the multimodal complexity of interaction. A second aim of the study is therefore to review, evaluate and develop new forms of multimodal transcription and to reflect on the insights they offer.

The concept of 'visualising young children's play' contained in the thesis title speaks not only to educational researchers but has potential relevance to practitioners using video in early years classroom observation who seek to document children's learning in new ways. This research invites tentative parallels to be drawn between academic and professional uses of video for recognising meaning-making in child-initiated play.

Through its two research questions, the study therefore brings together the interconnected aspects of substantive research into child-initiated play in early years education and the methodological aims of the MODE project in developing apt tools for researching multimodal meaning-making. Simultaneously, it reflects my commitment to connecting research and education practice, drawing upon my own teaching background and research interests in order to generate insights of relevance to academics and educators alike.

Thesis Structure

In order to articulate a multimodal social semiotic perspective on play, the thesis opens in Chapter One with a critical overview of dominant conceptualisations of play in early childhood education. The current Early Years Foundation Stage curriculum (EYFS) is critically examined, identifying key theoretical influences and how a discourse of 'learning through play' is constructed and enacted. Tensions for practice are considered, and alternative socio-cultural perspectives on play are discussed.

In Chapter Two, multimodal perspectives on play and learning are considered as an alternative to instrumentalist approaches. The central tenets of multimodal social semiotics are outlined and provide the theoretical framing for the study, shifting the focus to play as meaning-making. Studies adopting multimodal perspectives are considered, with implications for the tools and methods used in such research.

Researching play from a multimodal social semiotic perspective requires apt methodologies which attend to the wide array of tools for meaning-making, where language may be one mode among many. In Chapter Three the particular potentials and challenges posed by video data and transcription are considered, reviewing theoretical perspectives and key developments in multimodal research.

Chapter Four outlines the methodological approach adopted in the study, including the research design, methods of data collection and approach to multimodal analysis. The fieldwork combined elements of teacher-research and an ethnographic approach within a multimodal methodology, collecting video observations of child-initiated play in a nursery. This chapter includes discussion of central ethical issues, including the particular challenges of researching with young children and the considerations entailed in video-based research.

The findings are presented in Chapters Five to Eight, structured as four case studies of child-initiated play. Each case study chapter considers a different episode of play from the same nursery, and reflects on how each episode posed particular challenges for transcription. These chapters presents a range of multimodal transcript designs in order to examine the complexity of child-initiated play from a social semiotic perspective. The case study chapters therefore combine critical reflection upon the process of multimodal transcription with discussion of the insights into play generated through the transcripts themselves. In this way, the case study chapters intertwine both the methodological and substantive aims of the study, through exploring issues relating to multimodal transcription in a situated, empirical context.

Chapter Nine draws together central themes and findings from across the case study chapters in order to illustrate and articulate a multimodal social semiotic perspective on child-initiated play. Through the fine-grained analysis of play episodes outlined in the findings chapters, this perspective highlights the semiotic resourcefulness, transformative engagement, agency and interest, and multimodal complexity of young children's play. As multimodal transcription was fundamental to developing such insights, this chapter outlines the importance of principled transcript design in multimodal research and reflects on the effects of particular choices in transcription.

Chapter Ten concludes the thesis by proposing that multimodal transcription not only 'visualises' play by making it visible and sharable, but might also shape how we understand the semiotic complexity of play. The consequences of a multimodal social semiotic perspective on play are considered as recognition of meaning-making in early childhood education, both in educational research and in classroom practice. Given the changing tools available to practitioners for observing and recording play, this chapter speculates on parallels between multimodal transcription of video and new forms of documentation and assessment in early years practice. The particular affordances of the different multimodal transcript designs developed in this study are summarised, suggesting that transcription can act as a powerful tool for recognition in multimodal research but requires principled transcript design. The thesis concludes by considering future directions for multimodal transcription in light of on-going technological developments. In combination, it is hoped that an original contribution is made in relation to the central issue of *recognition* of meaning-making in early years educational theory, practice and methodology.

Chapter One: Discourses of 'Learning Through Play'

Early years education has been the subject of increasing attention in recent decades. With large-scale longitudinal studies such as the EPPSE project highlighting the lasting impact of early years education and care (Siraj-Blatchford et al., 2002; Sylva, Melhuish, Sammons, Siraj-Blatchford, & Taggart, 2004), this age range has seen a period of increased legislation and investment internationally. In the UK, intervention in the early years has increasingly been adopted as a key policy lever for addressing social disadvantage, alleviating inequality, and facilitating the return of mothers to the labour market (particularly under the 'New Labour' government from 1997-2010; see Anning & Ball, 2008). With increased attention placed on the importance of early childhood education, debates endure regarding what 'effective' early childhood education involves, who defines its aims and purposes, and how it might be evaluated (Ball, 2008; Dahlberg et al., 1999).

Amidst these debates there continues to be a particular focus on the place of play in young children's education. Play has been observed, researched, analysed, represented, interpreted and discussed at length from a variety of perspectives and disciplines over time, yet it continually evades precise definition, and it has been noted that "we do not seem any nearer to comprehending or valuing it" (Moyles, 2012, p. 1). In addition, the diverse forms play takes and the complex, flexible nature of play clearly make it a broad and challenging area of research. This challenge may be related to the socially constructed nature of play, since it is "a multidimensional construct that varies in meaning across time, culture, and contexts" (Cohen, 2006, p. 18), and is interwoven with changing theories of childhood; a notion which Sutton-Smith calls 'the ambiguity of play', highlighting the multitude of discourses the term can encapsulate (1997).

This chapter critically discusses pervasive developmental constructions of play and their influence on play within the current Early Years Foundation Stage (EYFS) in England. The tensions raised in early years practice are considered, calling for a rethinking of the relationship between play and learning. This chapter therefore establishes the background and rationale for adopting a multimodal social semiotic perspective on play, which is presented in Chapter Two. As the topic of play is so vast and wide-ranging, this review is inevitably partial and does not propose to be an entire account of the field of play, yet serves as an overview of key play perspectives that endure and hold particular influence. Further research relating to specific types of play is incorporated in the introduction to the play case studies forming Chapters Five to Eight.

Developmental Perspectives on Play

The binary separation of 'work' versus 'play' has been much contested (Broadhead, 1996; Moyles, 2010; Ranz-Smith, 2007) with discussion increasingly focusing on the close association between play and learning in early childhood. This association is by no means new, with work as far back as Plato urging, "don't use force in training the children in the subjects, but rather play" (cited in Karpatschof, 2013, p. 253), positioning play as an educational method where free participation, rather than coercion, is seen as a preferable approach to learning. In various forms, this close connection between play and learning remains a longstanding and enduring concept, encapsulated in various forms in the work of key 'play pioneers' whose perspectives on play continue to influence early years education to this day (e.g. Friedrich Froebel, Maria Montessori, Rudolf Steiner and Susan Isaacs). However, as Broadhead notes, "Play is a complex landscape: understanding how play connects with learning deepens the complexities even further" (2010, p. 177).

A central theme recurring in many dominant theoretical conceptualisations of play is its usefulness as an educational device. Reiterating the perspective of Plato after several centuries, the Enlightenment philosopher John Locke (1632-1704) perceived value in play rather than force as a device in learning, writing, "I have always had a fancy, that Learning might be made a Play and Recreation to children; and they might be brought to desire to be taught" (Locke, 2017/1693, p. 148). Whilst this view marked a departure away from the strict and often punishing educational methods prevalent at that time, such perspectives tend to position play as a device to disguise or deliver 'real' learning or socialisation through playful activities rather than positioning play as meaningful activity in its own right. It can be argued that similarly instrumental perspectives on the usefulness of 'educational play' (Wood, 2009, 2010a) have been sustained and entrenched further through developmental theories of play and learning, becoming a particularly dominant discourse in research of education and in the curriculum guidance for early education in England (Whitebread & Coltman, 2008; Moore, Edwards, Cutter-Mackenzie, & Boyd, 2014).

Whilst developmental perspectives argue play's importance in relation to learning, such theories present a distinctly hierarchical, stage-based conceptualisation of play. For instance, in his influential work in developmental psychology, Piaget (1936) emphasised the cognitive functions of play, suggesting that play provides a means of consolidating existing skills and understanding through repetition. Based largely on observations of his own children, Piaget (1945) suggested that children's cognition develops in stages corresponding broadly with age, charting a developmental sequence of play roughly mapped onto these stages, from 'practice play' (mainly sensorimotor play in infants), through 'symbolic play' (representing objects from the real world internally, such as in fantasy play) to eventually being superseded by 'games with rules' (usually in co-ordinated play with other players). Other stage-based categorisations of play have been

similarly proposed (e.g. Parten, 1932; Smilansky, 1968), with Rubin, Watson and Jambor (1978) combining such sequences into a 'play hierarchy', attempting to identify increasing 'maturity' in children's play.

From such perspectives, play is seen as part of an age-related continuum of complexity, giving greater value to certain forms of play and thereby positioning others as deficient or mere preparation. The developmental tradition appeals to a desire to understand normative development, and to make predictions and recommendations about how to teach based on an anticipated sequence of how children learn in different phases of maturation (Sutton-Smith, 1997). In this way, developmental psychology has been concerned largely with "mapping the increasing complexity of the human organism", with a tendency to "convert the maps of development toward maturity into recommendations for how to accelerate children's' progress across those maps" (Sutton-Smith, 1997, p. 36). From such a perspective, difference and diversity is likely to be seen as deviation or deficiency in relation to specified trajectories. This positioning of play as a means to identify, evaluate and accelerate development, following a mostly linear, normative sequence of stages, has strong connections to the English educational tradition of using play as a pedagogic device and assessment measure which endures today.

Whilst strongly influential in psychology and the field of child development, Piaget's approach to play stages has received criticism on the grounds that it fails to acknowledge that play in various forms continues into adulthood (see Huizinga, 1949), that it does not readily incorporate all play types (for instance, language play or rough-and-tumble play), and that it implies a simplistic linear, sequential development which was not well-founded (see Wood & Bennett, 1998). Piaget's stage theory can also be contested regarding its emphasis on developmental stages as determinates of children's learning, placing great significance on children's developmental 'readiness' and little emphasis on the role of adults and peers (Sutherland, 1992).

The social dimension to play has received greater emphasis in the work of Vygotsky (1978), which credits play as "purposeful activity for a child" (p. 17) and as "the highest level of preschool development" (p. 16). Vygotsky viewed play as a creative process in and of itself, in which the child acts at the forefront of their cognitive development, with neo-Vygotskians considering play to be a 'leading activity' for learning (Leontyev, 1981/2009). Vygotsky famously stated:

> In play a child is always above his average age, above his daily behaviour; in play it is as though he were a head taller than himself. As in the focus of a magnifying glass, play contains all developmental tendencies in a condensed form; in play it is as though the child were trying to jump above the level of his normal behaviour. (Vygotsky, 1967b, p. 16)

Within Vygotsky's broader conceptualisation of learning, play is considered to create a 'zone of proximal development' between the level at which the child can operate on their own ('level of

actual development') and the level when supported by an adult or more-experienced peer ('level of potential development'). This perspective on play has been expanded through attention to the adult or peer's role in 'scaffolding' children's learning (Wood, Bruner, & Ross, 1976), and further developed by Rogoff as children's 'guided participation' in wider communities of practice (Rogoff, 1990; Rogoff, Mistry, Goncii, & Mosier, 1993). Such theories therefore emphasise play as a dynamic, collaborative, social process situated in particular cultures and environments (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 1998). These perspectives frame much contemporary research on play and have become particularly influential in early years pedagogy, emphasising the role of the adult in extending learning through play. For instance, the findings of the REPEY project place particular emphasis on the importance of 'adult-initiated' and 'child-initiated but adult extended' play activities (Siraj-Blatchford et al., 2002). In this way, such theories on play have given particular emphasis to the pedagogical potential of play and an interventionist adult role (Anning, 2010).

In their different ways, Piaget's stage-based developmental play theories and Vygotsky's theorisation of the adult's role in play have constructed a strong discourse of 'learning through play', which has become particularly influential in contemporary early years education. Sutton-Smith (1997) considers such theories to contribute to a pervasive modern rhetoric of 'play as progress' which positions play as important for children's social, moral and cognitive growth, focusing on potential developmental gains rather than other aspects such as enjoyment. Traces of developmental theories can clearly be identified within the current EYFS, and whilst such perspectives argue for the significance of play in early childhood education, they raise a number of tensions discussed below.

Play in the Early Years Foundation Stage

Throughout contemporary curriculum and policy documentation for early years education in England, play is positioned as vital for young children's learning. For instance, the EYFS Statutory Framework states that "play is essential for children's development", and that each area of learning and development featured in the framework "must be implemented through planned, purposeful play and through a mix of adult-led and child-initiated activity" (Department for Education, 2017, p. 9). Aligning play so closely with child development and learning in the EYFS might be viewed as taking play seriously, elevating its status and addressing the issue identified by Nutbrown that early years education is often simplistically perceived as "playing with kids" (2012, p. 35). Yet whilst such statements appear to give play a central position in the EYFS and seem to grant 'official permission to play' (Anning, 2010), the notion of 'planned, purposeful play' is problematic. Play might be defined as inherently open-ended, spontaneous and intrinsically motivated by the player (Bruce, 2011), meaning activities that are 'planned' and 'purposeful' may by their very nature cease to be play at all. As Wood states, "The emphasis on

'purposeful play' carries the opposite assumption that without pedagogical framing, play would be purposeless" (2010b, p. 18).

Such terminology raises the question of *whose* purposes play is for, with the EYFS tending to privilege the adult's pedagogical aims, framed by statutory assessment including the EYFS Profile. Guidance for completing the EYFS Profile foregrounds the importance of play, including it in a series of 'Characteristics of Effective Learning', which it is stated should "underpin all 7 areas of learning and development" and be evidenced in children's summative assessments at the end of the Foundation Stage (Standards and Testing Agency, 2016, p. 22). Yet whilst the EYFS asserts that every child should be respected as an individual, and recognised as having their own needs and interests, the Profile outlines 'Expected Levels of Development' against which each child must be assessed at the age of five. The assessment process requires teachers to use observations of play to make judgements as to whether or not children are meeting the expected, normative levels. In this way, the EYFS Profile encapsulates age-related Piagetian developmental stage theories of play and learning. Assessment in the early years might be seen to be theoretically incongruous with other parts of the EYFS, where individuality, diversity and the social aspects of play and learning are given greater prominence (Wood, 2010b).

The inclusion of play in the EYFS is distinct to the early years curriculum for children aged from birth to five years old, with mentions of play and play-based learning absent from the Primary National Curriculum for children aged five to eleven, apart from in relation to playing sports and musical instruments (Department for Education, 2014). In schooling beyond the early years, play is likely to be authorised in physically and temporally separate spaces to those established for 'learning', such as a playground at specified playtimes between lessons (Frost, 2010; Smith, 2010). The closeting of play into discrete times and places during the school day is prefigured in the EYFS, where there is an overtone that children should gradually play less as they progress through early education. For example, guidance suggests that practitioners should shift the balance from child-led play to adult-led activities "to help children prepare for more formal learning, ready for Year 1" (Department for Education, 2017, p. 9). Whilst most European countries start compulsory schooling at age six, (and at age seven in many northern European and other international contexts), the statutory starting age in England is the term after a child's fifth birthday. In effect, due to many school entrance policies, most children start primary school Reception Class in the September of the year they turn five, meaning Summer-born children begin school soon after their fourth birthday (Anning, 2010). The English early years system therefore offers comparatively fewer years of play-based education than many other countries, with the EYFS itself implying that play should be given decreasing emphasis throughout the early years to facilitate transition to more formal teaching.

A further tension arises in relation to the role of the adult in play in the EYFS. The statutory framework states that "children learn by leading their own play, and by taking part in play which is guided by adults" (Department for Education, 2017, p. 9), and that there is an "on-going judgement to be made by practitioners about the balance between activities led by children, and activities led or guided by adults" (Department for Education, 2017, p. 9). The ambiguous notion of "balance" and "on-going judgement" can become further compromised in light of increasing pressures to meet specific assessment standards at the end of the Foundation Stage, as well as 'top-down' pressures to prepare for assessments including the *Phonics Screening Check* for children aged five to six, and the Key Stage 1 SATS test at age six to seven.

The comparatively young school starting age and increasing number of assessments for children at ever-younger ages in the UK sits against a background of high-profile international educational assessments in which the UK fares comparatively poorly (e.g. the most recent Programme for International Student Assessment - PISA - OECD, 2016). With wider concerns surrounding national economic productivity now and in years to come, an agenda of 'competitive accountability' permeates education including the EYFS (Roberts-Holmes, 2015), manifested in increasingly high-stakes testing, school inspections and league tables (Dahlberg & Moss, 2004; Dahlberg et al., 1999). With on-going discussions surrounding the introduction of additional 'Baseline Testing' upon children's entry into the EYFS at age three, and an 'International Early Learning Study' proposed by the OECD to conduct cross-national evaluations of early years learning outcomes, this agenda may intensify further in coming years. Such a climate can be seen to position children in the early years as "school-pupils-in-waiting" (Rogers, 2013, p. 161), with early childhood education as a period of preparation in order to ensure 'school-readiness' (Whitebread & Bingham, 2012) and thereby gain a competitive international advantage. These pressures, which have been described as the 'schoolification' of the early years (Roberts-Holmes, 2015), therefore intensify agendas of accountability and performativity and risk compromising play-based approaches in favour of more formal, adult-directed teaching.

Whilst many educators hold longstanding and 'cherished beliefs' about the importance of play in the early years (Anning, 2010), and whilst the United Nations Convention on the Rights of the Child outlines every child's right to play (UN General Assembly, 1989), the issues discussed above lead to many tensions in early years practice. Anning suggests that early years teachers feel increasingly "trapped between conflicting imperatives: to focus on teaching 'the basics' of literacy and numeracy, and to deliver a developmentally appropriate and play-based 'nursery education' curriculum" (2010, p. 23). Moyles similarly suggests that ambiguity regarding play in the EYFS leads to confusion surrounding the practitioner's role in play, including how and when to support it (2010). Research has suggested that child-initiated play in particular is less often present and valued in early years practice than other forms of play (Moyles & Worthington,

2011), and that the meanings children bring to play are likely to be overlooked or interrupted in favour of prescribed learning objectives (Rogers, 2013; Rogers & Evans, 2008).

In summary, whilst seemingly placing play at its centre, the EYFS raises many tensions. The terminology of play as 'planned' and 'purposeful' is problematic, particularly when the adult's plans and purposes are likely to privilege the pedagogical aims of the EYFS profile, underpinned by normative developmental stages. In combination, a comparatively early school-starting age, an agenda of performativity and accountability heightened through locally and internationally competitive league tables, high-stakes assessment at younger ages and an agenda of 'readiness' for formal schooling results in many challenges which threaten the place of child-initiated play in the early years.

Challenging the 'Pedagogization of Play'

Whilst prevalent in education research and embedded within the EYFS, developmental perspectives towards play are increasingly being challenged. Exemplifying Sutton-Smith's (1997) 'play as progress' rhetoric, the 'instrumental' positioning of play has been critiqued for constructing play in terms of absence (what the child is not yet doing) rather than considering the significance of play to the child at a particular moment in time (Wood, 2010b). Termed the 'pedagogization of play' (Rogers, 2013), critics argue that many pedagogical practices "appropriate the meanings that children bring to play by negating them in favour of prescribed learning objectives or by subjecting classroom play to frequent interruptions to meet other more mundane tasks" (Rogers 2013, p. 160). It has been argued that this tendency to control and constrain children's play for educational purposes risks reducing rich and complex activity to a series of levels and learning outcomes (Wood, 2009). The result is that the significance of play to children themselves is in danger of being overlooked, its intrinsic qualities hijacked for the purposes of teaching and assessing (Rogers, 2013; Rogers & Lapping, 2012).

Resistance to the perceived 'schoolification' of the early years education system in England is currently on the agenda of a number of organisations consisting of parents and practitioners in addition to researchers (Alliance for Childhood, 2009; More Than a Score, 2017; Rescue Our Schools, 2017). However, there have been accusations that proponents of play in the early years risk blindly adopting a 'play ethos' which repeats "strong and unqualified assertions of the functional importance of play" in an attempt to defend it from threats (Smith, 2010, p. 28). Smith suggests that those adopting a 'play ethos' tend to overstate and idealise the importance of play, thereby weakening arguments for its place in education. As Pellegrini and Boyd note, play has become "an almost hallowed concept for teachers of young children" (1993, p. 105). This raises questions as to how qualities of play might be recognised and valued without entering into the dominant developmental 'play as progress' rhetoric and whilst avoiding a 'play ethos' idealisation of play.

Play has been conceptualised in many different ways across time, culture and contexts (Sutton-Smith, 1997) and there seems to be value in looking towards alternative positionings of play in early years education internationally. New Zealand's *Te Whāriki* curriculum, for instance, states that practitioners should support "spontaneous play" and "should avoid unnecessary intervention" such as interrupting or dominating children's play (New Zealand Ministry of Education, 1996, p. 83). Furthermore, it proposes that "playing with ideas and materials, with no objective in mind, can be an enjoyable, creative and valid approach to learning" (New Zealand Ministry of Education, 1996, p. 84). Positioning play as something spontaneous, enjoyable and creative, permitted to be open-ended and without objectives, presents a markedly different perspective to that foregrounded in the EYFS (Carr & Lee, 2012). Similarly, the approach of the Reggio Emilia pre-schools in Northern Italy positions play as a right of all children, rejecting the idea of a prescribed curriculum and instead basing learning around observing and responding to the interests of groups of children and their communities (Edwards, Gandini, & Forman, 1998; Moss, 2014). Drawing influence from the Reggio Emilia approach in their curriculum and teacher training, the Swedish preschool curriculum allows for similar flexibility and states the importance of "play and enjoyment in all learning", including play as a means through which children make sense of the world (Skolverket, 2010, p. 6).

Whilst each early years education system exists in its own specific cultural and social context, with particular historical roots and challenges, comparative early years approaches highlight alternative conceptions of, and relations between, play and learning. Increasingly a 'middle way' is proposed (Smith, 2010), seeking to recognise the significance of child-initiated play whilst acknowledging that it is not the only way that children learn. Broadhead et al. (2010) advocate 'playful pedagogies' and Wood (2010a) recommends 'integrated pedagogical approaches' which construct an 'inside out' perspective on play's significance for the players themselves, rather than 'outside in' perspectives which position play instrumentally. Positioning play as 'knowledge-creation' (Broadhead et al., 2010) such perspectives attempt to shift discussion towards considering "what play means for children" rather than "what play does for children" (Wood, 2010b, p. 12).

Recent Developments in Socio-cultural Theorisations of Play

In order to explore what play means for children, a rethinking of the relationship between play and learning is required. In contrast to developmental perspectives, contemporary research into young children's play increasingly draws upon a 'new sociology of childhood' which proposes that "the ways in which [childhood] is understood and made meaningful is an act of culture" (James & Prout, 1997, p. 7). Central tenets of such a position are that childhood is considered a social construction, that children's cultures are worthy of study in their own right, and that children should be seen as active social agents (James & Prout 1997; Jenks, 2006). Such

theories therefore consider play to be a means through which knowledge is constructed in particular social and cultural contexts, made visible through children's choices, activities and representations in various forms (Wood, 2010b). In this way, socio-cultural perspectives conceptualise play as interesting and worthy of serious close study, not in terms of children's growth, development and potential future outcomes, but as an important and complex socially organised practice that is meaningful in its own right.

Whilst arguing that play is significant, recent socio-cultural approaches call into question the common assertion that play is 'vital' for learning, describing societies in which play is constrained by factors such as time restrictions, availability of play companions and play objects, which may result in adult attitudes that cultivate or curtail play to varying degrees (Gaskins, Haight, & Lancy, 2007). Therefore, whilst acknowledging the tendency of young children across societies to engage in play, and recognising play as an important site for situated co-construction of knowledge, socio-cultural approaches might be seen to challenge Romantic views of play as 'natural' (Broadhead et al., 2010). Similarly, socio-cultural perspectives increasingly contest the common conception of play as innocent by uncovering the rude, messy, challenging and disturbing aspects that children's play can have, such as its use as a tool for power relations and bullying (Sutton-Smith, 1997; Wood, 2014). From such perspectives, play is conceptualised as part of an autonomous world of childhood in which it might threaten conventions and express subjective worlds not permitted by adults (Sutton-Smith & Kelly-Byrne, 1984). In this way, recent socio-cultural perspectives on play resist an idealistic 'play ethos' (Smith, 2010) whilst articulating play's particular significance to children themselves.

Socio-cultural approaches to play might therefore be credited as highlighting the plurality of play and childhoods and recognising children's own construction of their play cultures. Lester and Russell argue that, first and foremost, play belongs to children (2008). An implication for studies of play might be that researchers have a responsibility to "tread lightly" on children's own play cultures (Lester & Russell, 2010, p. 46), ensuring that research respectfully recognises children's own meaning-making within play (McInnes, Howard, Miles, & Crowley, 2011).

To research children's meaning-making within play in this way, importance is often given to carefully and closely observing children's communication as a window into the meanings they are constructing. Particular interest has been given to ways in which play involves symbolic representation in various forms, with Vygotsky considering play to be "a form of behaviour in which the child is liberated from situational constraints through his activity in an imaginary situation" (Vygotsky, 1967b, p. 8). He gives the example of a child engaged in pretend play using a stick as a horse, suggesting that representing one thing with another "is such a reversal of the child's relationship to the real, immediate, concrete situation that it is hard to evaluate its full significance" (Vygotsky, 1978, p. 10). As such, symbolic representation is given particular importance within socio-cultural perspectives on play.

It has been argued that not only do children play with representing concepts in various forms in play, but that the 'framing' of play as something different to 'ordinary life' is also particularly significant. Bateson (1956) views play as paradoxical in nature, suggesting that action in play conveys the message, 'This is play', by being both of the world and not of the world, and so demonstrating sophisticated symbolic representation. Garvey suggests this is conveyed through children's "stylized" speech, using a distinct linguistic registrar and 'paralinguistic' features to maintain the metacommunicative message 'This is play' (1977). Sutton-Smith argues that such close analysis of *how* play unfolds is necessary in order to recognise "the incredible structural complexity of the intricate enactment of play" (1997, pp. 194-195).

Whilst these theories suggest complex layers of communication and representation in young children's play, many studies of play have tended to privilege the role of language (Vygotsky, 1978, 1986). Increasingly, attention has been given to the importance of looking beyond what children might say in play, and the need to observe closely what they do (Athey, 2007; Drummond, 2003; Nutbrown, 2011) with Flewitt arguing for "a pluralistic interpretation of the construction and negotiation of meaning" (2006, p. 25). In this way, socio-cultural theories increasingly build on Vygotsky's concept of language as a 'tool of thought', expanding this to consider a wider range of modes for making meaning.

A socio-cultural perspective on play therefore presents a contrast to pervasive developmental theories, seeking to examine play as socially and culturally situated, as meaningful to players themselves, and involving complex layers of communication. As Wood notes, troubling established discourses necessarily troubles implications for practice:

> If practitioners focus only on assessing the forms of knowledge, skills, and understanding that are inscribed in curriculum frameworks, they will achieve fixed and partial meanings and interpretations of children's free play activities. In contrast, by paying attention to microanalyses of play, alternative meanings and interpretations become accessible. (Wood, 2014, p. 16)

This present study seeks to build on a socio-cultural perspective on play, placing particular emphasis on the theoretical and methodological approaches necessary to make such aspects of play visible. There is therefore a need for theories of play which place emphasis firmly on *meaning* made in particular social contexts, where not only language but multiple modes are given careful, detailed consideration.

Chapter Two: Multimodal Perspectives on Play and Learning

Resisting dominant instrumental perspectives on play requires a reconceptualisation of the relationship between play and learning. As Wohlwend notes, this has prompted researchers and theorists to search for approaches that can account for the "emergent, contentious, joyful, and multiply messy" character of play (Wohlwend, 2017, p. 183). Apt theoretical framing is necessary in order to explore the meanings children make in their play, and to ensure that all forms of meaning-making are given close and equal attention. Located within a broad socio-cultural frame, this chapter argues that a multimodal social semiotic perspective provides such an approach. The chapter opens with a discussion of the broad concept of 'multimodality' before outlining the particular orientation of a social semiotics, providing the theoretical underpinning for the chapters that follow. The implications for perspectives on play are discussed and existing multimodal research into children's play is considered. This chapter therefore addresses the first research question of the study, considering how multimodal social semiotic theory might offer new ways of seeing and understanding child-initiated play.

Multimodality

Multimodality is a term that is now widely used, although its use varies both across and within different academic disciplines and research traditions (Jewitt, Bezemer, & O'Halloran, 2016). Although terminology and emphases differ, key principles of multimodality are that communication and representation are about more than language, always simultaneously combining multiple forms, each offering distinct potentials and limitations for making meaning (Jewitt et al., 2016). As such, multimodality argues that in order to study meaning, all forms of representation and communication must be attended to.

Academic interest in communication beyond language is often traced back to the work of early 20th Century semioticians and the idea that linguistics could be considered one branch of a more general system of 'semiology' (Saussure, 1916). However, these early theories make the common and enduring assumption that language is "the most important'" of all the sign systems (Saussure, 1916, p. 15). Here parallels can be drawn with Vygotsky's theories of learning, which similarly suggest that language enables the highest, most complex forms of thinking and is therefore ultimately of greatest importance (Vygotsky, 1967, 1978). Multimodality challenges such a perspective by proposing that there are *differences* between forms of communication and the possibilities they offer for meaning-making, but that one form does not have more or less potential or importance than another. As Jewitt et al. note, "multimodality marks a departure from the traditional opposition of 'verbal' and 'non-verbal' communication, which presumes that the verbal is primary and that all other means of making meaning can be dealt with by one and the same term" (2016, p. 3).

A second issue multimodality challenges is the suggestion that different forms of communication should necessarily be dealt with by specific sub-disciplines (e.g. musicology to study music; gesture studies to study gesture), following Saussure's implication that semiology could be separated into distinct 'branches' (1916/). Multimodality instead argues that different means of meaning-making always appear together in integrated ways, and so existing specialised disciplines are insufficient for accounting for the complex whole. As such, multimodality argues for the need to move beyond traditional empirical boundaries and to develop theories and methods which can account for the range of forms used simultaneously in meaning-making (Jewitt, 2014; Kress, 2010).

My study addresses and seeks to expand the theoretical propositions of multimodality in two key ways. Through its substantive research focus, my work contests developmental perspectives on play and the emphasis often placed upon children's language use in education, shifting focus to the range of forms children are using with particular consideration of their different potentials and constraints for meaning-making. Through the methodological focus of my work, this study also contributes to multimodality as a disciplinary field in social science, developing forms of transcription which aim to bring together multiple modes in analysis rather than privileging language or focusing on isolated modes.

Multimodal Social Semiotics

Beyond the core assumptions that communication is about more than language, and that multiple forms must be considered in combination, the concept of 'multimodality' has been adopted and applied through a range of different approaches. Some of the most prominent include systemic functional linguistics (Bateman, 2011; O'Halloran, 2004; O'Toole, 2011; Unsworth, 2008), social semiotics (Hodge & Kress, 1988; Kress, 2010; Van Leeuwen, 2005), Conversational Analysis (Goodwin, 1981; Mondada, 2011), Geo-semiotics (Scollon & Wong Scollon, 2003), and Multimodal (Inter)actional analysis (Norris, 2004). Each approach entails a particular epistemological perspective, concept of 'mode' and typical empirical focus and methodology.

This study adopts a social semiotic approach to multimodality (Kress 2010), aligning with the broader epistemological and ontological perspective of the research which emphasises the social construction of reality and the agency of individuals in meaning-making. Specifically, social semiotic theory is concerned with the social dimensions of meaning, based on the foundation that meanings derive from social action and interaction using semiotic resources as tools (Jewitt et al., 2016). In this way, social semiotics is an apt approach for examining both the social act of play and the process of transcription. As social semiotics is the theoretical underpinning for my study, key concepts and terms from social semiotics are outlined below to contextualise their usage in this thesis.

Social semiotics builds upon Halliday's concept of 'language as social semiotic' (1978), emphasizing the relationship between language and its social uses, and seeing every linguistic act as involving choices. Unlike structuralist semiotics (e.g. Barthes, 1964/1977), social semiotics places emphasis on the social context of sign-making and the agency of the sign-maker (Hodge & Kress, 1988, 1993). Within a social semiotic perspective, signs are not viewed as fixed or abstract, but shaped through cultural, social and historical influences. Related to this position, and central to social semiotics, is the concept of the 'motivated sign'. This can be seen to contrast with Saussure's suggestion that the relation between signifier and signified is 'arbitrary' (Saussure, 1916). Instead, social semiotics recognises an important aptness of fit between meaning and form, emphasizing the choices made by the sign-maker in the act of sign-making, drawing upon the most appropriate forms available for representing the meaning they want to express at a given moment.

Sign-making is therefore shaped by the sign-maker's 'interest' at the point of sign-making (Hodge & Kress, 1993). Jewitt et al. define interest as:

> The momentary condensation of all the (relevant) social experiences that have shaped the sign-maker's subjectivity – a condensation produced by the need for a response to a prompt in and by the social environment in which a new sign is made. (2016, p. 68)

Viewing signs as motivated and constantly being remade therefore enables interpretation of the sign-maker's interest through careful scrutiny of signs. The concept of 'sign-maker' is used to refer to both the producer and interpreter of a sign, highlighting that sign-making can be an active process of re-making, and that interpretation of signs is not passive absorption but active semiotic work. Therefore, recognising the agency of the sign-maker and the intentionality of their sign-making is central to a social semiotic approach, and to the approach to play and transcription adopted in this study.

Although social semiotics developed from Halliday's (1978) work on language, subsequent work has challenged the assumed importance and dominance of language in communication and has contested the idea that linguistics provides an apt discipline for studying sign-making in other forms. Since the 1990s, a multimodal social semiotic approach has developed, seeking to examine meaning-making in multiple modes, both with and beyond language, such as drawings, diagrams, three dimensional objects, music, architecture and multimedia texts (Kress & Van Leeuwen, 2001; Kress & Van Leeuwen, 2006; Lemke, 1998; Van Leeuwen, 1999). A social semiotic approach to multimodality seeks to identify and describe the 'modes' available and how they are used in particular situations, including the choices sign-makers make and what motivates these. From a social semiotic perspective, a 'mode' can be defined as a socially organised set of resources for making meaning (Kress, 2010; 2014). Whilst there are contestations as to what 'counts' as a mode, some forms commonly treated as modes include

image (Kress and van Leeuwen, 1996), moving image (Burn, 2013; Burn & Parker, 2003), sound (van Leeuwen, 1999), gesture (Domingo, 2011; Mavers, 2011), and gaze (Flewitt, 2006; Bezemer, 2008).

Whereas linguistic approaches have tended to presume the particular importance and dominance of speech and writing as modes, a multimodal social semiotic approach instead presents the concept of 'modal affordance', referring to the idea that different modes offer different potentials for making meaning (Kress, 1997). Affordance can be shaped by both material properties and the mode's social history, inevitably affecting the kinds of semiotic work which a particular mode might be used for in a particular context. As modes have different affordances, multimodal social semiotics is particularly interested in the remaking of meaning within and across modes, encapsulated in the terms of 'translation' (within the same mode) and 'transduction' (moving across modes) (Kress, 2010). These concepts highlight that re-making meaning has profound implications, since the affordances of one mode are different to another resulting in inevitable 'gains and losses' in meaning (Kress, 2005). Here there are particular parallels to this study's focus on the act of transcription and the need to articulate the affordance of modes and the re-making of meaning entailed in the act of transcription (see also Bezemer and Mavers, 2011, Flewitt, Hampel et al. 2014).

A further concept to be given particular consideration within a multimodal social semiotic approach is 'design', linked to the principles outlined above. The notion of 'design' positions all sign-making as situated, purposeful and motivated. It refers to the process by which a sign-maker, shaped by their interest, will choose modes (whether explicitly or implicitly) and combine them into their motivated sign (Kress, 2014). Design is shaped not only by interest but also by the social situation, availability of modes and understanding of their affordances, with those who interpret and re-make signs seen as engaging in meaning-making as well as the original designer. Such a perspective takes issue with the notion that any act of sign-making can ever be 'mere copying', as signs are always newly made subject to transformative action, thereby newly designed (Kress, 1997). Multimodal social semiotics therefore offers a perspective centred upon meaning-making, presenting a potentially useful frame for reconceptualising child-initiated play.

Multimodality, Play and Learning

A social semiotic perspective positions play as an activity which, like all social activity, always has transformative, agentive meaning-making at its very core. As with every act of sign-making, so in play the sign-maker engages in principled communicative choices, shaped both by their interest and by what is available at that particular moment, in order to make meaning in a particular social and interpersonal context. In every act of sign-making, meaning is made anew, and in the act of making, so the sign-maker's own understanding is reshaped (Bezemer and

Kress, 2016). Play, as meaning-making, can therefore be considered a frame for 'transformative engagement', transforming both the outer signs and the inner signs of the sign-maker, providing a theory which reconceptualises the relationship between play and learning.

Furthermore, a *multimodal* social semiotic perspective highlights that play is always realised in a multiplicity of modes, which might include gaze, posture, manipulation of objects, facial expression and so on, as well as what is said. From such a perspective, children use multiple modes in play not to compensate for emergent language, but because they intend to convey the richest meanings possible with the means available (Kress, 1997; Wohlwend, 2017). Each mode available in play offers particular affordances that shape meaning-making in distinct ways and with implications for how these signs of learning are made apparent. Wohlwend suggests that play therefore offers children multiple ways to expand meaning-making, as the multimodal nature of play means "the combination of modes amplifies and/or complicates the separate strands of monomodal meanings" (2008, p. 128).

A multimodal social semiotic perspective on child-initiated play might be considered particularly relevant because it has been suggested that children readily switch between modes to convey their messages and meanings, and are perhaps less encumbered by cultural expectations for uses of materials than adults (Wohlwend, 2008). Kress suggests that moving between media and modes is a naturally synaesthetic, creative tendency which becomes increasingly suppressed in adulthood, but needs to be rediscovered and reinstated to support different possibilities of engagement in the world, and particularly within a changing landscape of communication (1997, p. 165).

A further significance to recognising multimodal meaning-making in play is suggested by Flewitt, whose multimodal studies investigating preschool classroom interaction reveal how children use the range of material and bodily resources available to them, "forcing a reexamination of Vygotskian accounts of the relationship between thought and language by producing grounded arguments for a pluralistic interpretation of the construction and negotiation of meaning" (2006, p. 46). Multimodality might then be considered a means of expanding Vygotsky's consideration of play as a symbolising activity and language as a 'tool for thought' (1978, 1986), moving beyond a linguistic focus towards recognition of the multiple modes children draw upon to communicate and represent their thoughts, experiences and understandings in play.

Multimodal perspectives have been applied across a wide range of fields and disciplines, and whilst there is a growing body of work adopting multimodal approaches to the study of children's play, there is a greater volume of research using multimodality to explore young children's literacy as a means of re-examining language-biased approaches to classroom interaction. For instance, the New London Group's landmark *Pedagogy of Multiliteracies* (1996) stressed the importance of multimodality in education for reconsidering notions of literacy in order to better

understand and support students' uses and design of texts in means beyond writing, particularly important in a world so increasingly influenced by multimedia. This has been developed particularly in the area of 'New Literacy Studies', which has endeavoured to expand notions of literacy from a focus on reading and writing to considering representation and communication more broadly (Pahl & Rowsell, 2006; Street, 1984, 1995).

Multimodal social semiotic studies have often sought to examine artefacts, using them to explore issues of agency and social power relations through traces manifested in the sign-making process. Researchers in this area have examined a range of 'multimodal texts', where text is used to refer to assemblages or ensembles of meaning, not only writing. In education, multimodal approaches have analysed artefacts such as school textbooks (Kress et al., 2005), toys (Van Leeuwen, 2005), picturebooks (Arizpe & Styles, 2016), children's drawings (Kress, 1997; Mavers, 2011), children's model-making (Pahl, 1999; Stein, 2003) and the layout of school classrooms (Wood, 2017). As forms for meaning-making are ever-changing, multimodal social semiotics has become a particularly valuable approach for those seeking to examine digital texts and communication in digital environments, including technologies and computer games for children (Crescenzi et al., 2014; Flewitt, Kucirkova et al., 2014; Sakr et al., 2014).

The notion of 'multimodal texts' is increasingly being expanded to include not only artefacts but also ephemeral, embodied 'texts'. From such a perspective, play might be viewed as a multimodal text (Wohlwend, 2008; 2017), demonstrating meaning-making in multiple modes, motivated by the interests of the sign-maker, shaped by what is to hand and the social norms operating at the point of sign-making. As Wohlwend notes, unlike material artefacts, play exists in the moment:

> In children's pretend play, player and actions and interactions with other players and materials *are* the meanings; thus the foregrounded modes convey meanings that move across space and time. Play scenarios are crafted with bodies, modes and objects in moments of experience that are emergent, spontaneous and often temporary … In play, collaborative meanings are imagined with immediate materials in the moment, improvisations that are transitory and always provisional. (2017 p. 183)

Whilst recognising that play consists of complex multimodal designs made-in-the-moment, the spontaneous, temporary and transitory nature of play poses challenges for research. Increasingly, video recordings have been used to study face-to-face interaction from a multimodal social semiotic perspective in contexts such as the home (Flewitt, 2005b) classroom (Kress et al., 2005; Wohlwend, 2011), operating theatre (Bezemer, Murtagh, Cope, Kress, & Kneebone, 2011) and museum (Hackett, 2014). In this way, developments in technology make new forms of analysis of play possible.

A multimodal social semiotic perspective therefore draws particular attention to the ways in which children are actively, ceaselessly making meaning in play in a multitude of modes. Such a

positioning of play also has implications for educators, since from such a perspective, to fail to consider the multimodal nature of children's play is to miss much of its complexity. Kress argues:

> The adult's own overwhelming focus on language and literacy makes it difficult for us to see children's meaning-making principles. Those of their practices we call 'play' we do not consider as part of communication, and therefore not worthy of *real* investigation … No wonder that the child's own semiotic disposition is not recognised in most institutional settings. (1997, pp. 12-13)

Such a perspective has led to calls for a 'generosity of recognition' in terms of recognising the meaning-making which may often be disregarded, unnoticed, invisible or taken for granted (Bezemer and Kress, 2016), where play might often be such a case.

Whereas language has traditionally occupied a position of particular importance in early years education, including many of the assessments practitioners are required to make of children in the EYFS (Bradbury, 2013), alternative approaches might position children's play and expression in multiple modes more centrally. The approach adopted by preschools in Reggio Emilia, for instance, proposes a theory of 'The Hundred Languages of Children', which seeks to recognise, support and give value to the many forms of expression children use to make meaning, such as drawing, movement, music, dramatic play and dance, in addition to speech and writing (Edwards et al., 1998; Filippini & Vecchi, 2000). The use of the term 'language' in the 'hundred languages' is somewhat at odds with a multimodal approach in which language is not seen as central and where conceptualising modes as 'languages' might be considered a limiting and counter-productive metaphor. However, the two concepts have some similarities. The 'hundred languages' emphasises the importance of children playfully connecting and combining forms and valuing the process of representing concepts in different ways in order to expand possibilities for meaning-making. Here there are parallels with the concept of multimodality, which similarly highlights that modes have distinct affordances, with transduction between modes resulting in re-making of meaning (Bezemer and Kress, 2016; Kress 1997; 2010). In this way, a multimodal social semiotic perspective can be seen to force a reconsideration of the relationship between thought and language, and between play and learning. It seems to have potential not only as a framing for research but also with connections to pedagogy, curriculum design, and the positioning of play in practice.

A multimodal social semiotic perspective on play therefore presents an alternative to the prevalent language-based focus of much research and instrumentalist perspectives on play whilst seeking to avoid the unfounded 'play ethos' critiqued by Smith (2010). A social semiotic perspective presents a lens through which to focus closely on meaning, seeking to recognise what play *means* to children (Wood, 2010b), and how children *make meaning* through play. Furthermore, a *multimodal* social semiotic perspective highlights that play is always realised in a multiplicity of modes, each with particular affordances that shape meaning-making in distinct

ways. As Sutton-Smith suggests, there might be particular value in attending minutely to children's play in order to examine its structure, organisation and complexity (1997), with Wood suggesting that microanalyses of play make new interpretations and meanings accessible offering deeper engagement with children's play (Wood, 2014). Whilst a multimodal social semiotic perspective supplies a framework for examining play in these ways, it requires apt methods and methodologies to support such a stance.

Chapter Three: Documenting Play through Video and Multimodal Transcription

In order to research play from a multimodal social semiotic perspective, apt research methods and methodologies are necessary. Video presents multimodal researchers with particular potentials for capturing and analysing fleeting, ephemeral dimensions of face-to-face interaction such as play, yet video also raises numerous challenges. This chapter critically considers key issues pertaining to video within a multimodal study, in particular the implications for transcription. Literature problematizing the theoretical status of the research transcript is discussed, and the development of multimodal transcription is considered. This chapter therefore acts as a 'bridge' between the multimodal social semiotic theoretical perspective outlined in the previous chapter and the study's methodology outlined in the following chapter, reflecting the particular methodological dimension of the thesis.

Video-based Research

The history of video-based social research can be traced back to the early uses of film in the late nineteenth century (Erickson, 2011), yet it is only relatively recently that video has become the "data collection tool of choice" for many social researchers (Jewitt 2012, 2). Where once the expense and size of video recording equipment prohibited its uptake and limited its fields of application, the video camera has since developed as a technology that is increasingly portable, affordable and non-specialist, offering possibilities to researchers seeking to study 'naturally occurring' situated interaction in contexts such as classrooms. Technological changes have also resulted in an increased presence of cameras and video in people's everyday lives and environments, for example through camera phones, webcams and CCTV, as well as in professional practices. The wide and varied use of video therefore presents new possibilities not only in terms of researcher-generated data, but also video produced by research participants and the "repurposing" (Jewitt 2012, p. 3) of existing video content, for example, analysis of YouTube video (Adami, 2009) and of medical laparoscopy recordings (Bezemer et al., 2011; Mondada, 2011).

Knoblauch et al. suggest the potentials of these new data might constitute a "video revolution" (2006, p. 9), with Luckmann adding that new recording technologies might offer the basis for a "qualitative leap in social research" (2006, p. 30). Despite this, it has been suggested that serious discussion of video-based approaches has "lagged behind" textual interpretive methods (Luckmann, 2006, p. 29), and that video has been somewhat methodologically overlooked (Kissmann, 2009). Whilst there is a body of work relating to visual research, particularly in anthropology and ethnography (for example Pink, 2007; Prosser, 1998), video has tended to receive scant attention in research methods handbooks, suggesting that despite increasing

uptake, methodological reflection into video-based research is “still in its infancy” (Wagner-Willi, 2006, p. 143) and is only beginning to receive particular attention (see Heath, Hindmarsh, & Luff, 2010; Jewitt, 2012; Wiles et al., 2008).

The qualities of video make it a rich information source for capturing episodes of activity that may typically be overlooked as momentary, and fleeting, as typical of child-initiated play. Video differs from other observational and visual material, such as field notes and photographs, as it provides a temporal and sequential record, offering information about an event as it unfolds moment-by-moment, whilst preserving the sequentiality, simultaneity and synchrony of interaction (Kendon, 1990). Furthermore, video provides a record of the fine-grained multimodal resources and practices participants draw upon in interaction, such as gaze, facial expression and movement alongside talk and its features. Video is also a “durable, malleable, shareable record” (Jewitt 2012, p. 6) with digital technology enabling repeated viewings and manipulation of temporal qualities, making it possible to revisit the video in different ways, for example slowed down, at speed, with or without sound. Repeated viewings are also made possible in different contexts, for example with participants and in research teams, enabling new listenings, new viewings and new interpretations (Lapadat & Lindsay, 1999).

Despite the potentials of video, its constraints and challenges must also be considered. The detail of video means that “a few minutes of recording produce a large quantity of visual, kinaesthetic and acoustic data” which might quickly become unmanageable and bewildering (Knoblauch et al. 2006, p. 14). Crucial decisions are often made in the moment, such as when to switch the camera on and off, what to focus on, whether to track children or remain in a fixed position, and whether to film at close range or from a distance, resulting in inevitable gains and losses in the video representation of the event. Choosing to observe at close range, for instance, might capture the fine detail of facial expression and gesture but inevitably loses the wider action. Recording decisions are often made in situ and in response to the action as it unfolds, highlighting video as a necessarily selective perspective on events (Jewitt, 2012), mediated by the technology of the camera (Duranti, 2006).

A criticism often levied against video research is that it distorts the situation and behaviours being scrutinised and so diminishes its empirical value. An opposing although equally problematic assumption is that video is entirely unobtrusive and provides a straightforward replica of reality. Both perspectives highlight a somewhat problematic perspective on reality and objectivity which has increasingly been challenged in favour of positioning video as a reflexive tool in the research process (Heath et al., 2010; Jewitt, 2012). For instance, in their work investigating midwifery home visits, Lomax and Casey (1998) studied the ways in which participants oriented towards and away from the video camera, seeing these moments as offering insights into informal/formal and shared/private boundaries in a particular context. From

this perspective, the camera's role in the social situation is not seen as creating 'good data' or 'bad data' but as a point of investigation.

A particular challenge raised by video-based research, and multimodal research in particular, is the issue of transcription, which has been identified as an area in need of further methodological discussion (Bezemer & Mavers, 2011; Davidson, 2009; Flewitt, 2006; Flewitt, Hampel, Hauck, & Lancaster, 2014; Knoblauch, Schnettler, & Raab, 2006). Transcription in social research usually refers to the process of turning a strip of spoken language into writing for purposes of analysis and dissemination of findings. However, if the research interest is not just spoken language but multimodal interaction, the issue of what and how to transcribe becomes particularly complex and necessitates further exploration. Before considering multimodal transcription in detail, it is valuable to first consider the status of the transcript in research.

Theoretical Perspectives on Transcription

The etymology of the word 'transcription' highlights its history and commonly attributed status in social research, translated from Latin as 'thing copied' and derived from the verb 'scribere', 'to write'. Lapadat relates different approaches to transcription to epistemological assumptions and research paradigms, suggesting that positivist traditions tend to treat transcription as a relatively 'straightforward' intermediary stage of research, whereby speech is turned into writing as preparation for analysis (Lapadat, 2000). This is distinguished from research adopting a constructivist stance, where attention has increasingly been drawn to transcription as representation (Lapadat & Lindsay, 1999). Rather than taking transcripts as transparent, it has been highlighted that the process of transcription will inevitably leave the transcriber's interpretive, analytical and theoretical "fingerprints" on the resulting transcript (Tilley, 2003, p. 752), and that as such they are academic artefacts (Bezemer & Mavers, 2011), shaped by theory (Ochs, 1979), political perspectives (Bucholtz, 2000) and professional vision (Goodwin, 1994).

Researchers have drawn attention to the process of transcription as one of translation (ten Have, 2007) and transformation (Duranti, 2006). Those adopting a multimodal approach have described this process as transduction (Bezemer & Mavers, 2011; Cowan & Kress, 2017), where meaning is remade across modes (Kress, 2010). Alternatively termed 'transmodal redesign' (Mavers, 2011), particular attention is given to the change in form and meaning when shifts across modes occur (for instance, when speech is represented as writing, or writing is remade as drawing). Bezemer and Mavers suggest that transcripts are therefore "transducted and edited representations through which analytical insights can be *gained* and certain details are *lost*" (2011, p. 196), reiterating Ochs' suggestion that selectivity in transcription both results from, and in turn generates, theory (1979).

In light of these inevitable gains and losses, questions might arise as to whether to transcribe at all. Particularly in light of the increasingly digitised dissemination of research, such as digital theses, webtexts and online journal content, it is increasingly possible to include extracts of the original video recording as part of the text or in digital appendices. However, Erickson's perspective on video urges caution, suggesting that video itself is not data, but an information source from which data can be identified (2011). As such, transcription might still remain an important "noticing device" (ten Have 2007, p. 95) or "discovery procedure" (Duranti, 2006, p. 307) in the social research process, and a means of making the researcher's data and analysis shareable, and so open to scrutiny and discussion.

In relation to new technologies, the primary challenge may be whether transcription systems designed for 'old technologies' such as the audio recorder can effectively represent material recorded by new technologies such as the video camera (Norris, 2002). Slembrouck considers the digital formats transcripts can now take, suggesting that online publishing of digital data means that the recording and analysis can remain open to inspection from both researcher and audience (2007). Silver and Patashnik compare options for computer assisted qualitative data analysis (CAQDAS) software when working with audio-visual data, including discussion of transcription (2011). They suggest that current CAQDAS packages are lacking particularly in relation to non-code-based approaches and representing data in non-linear formats, requiring researchers to reflect carefully upon their research needs when considering using the available software tools (Silver & Patashnik, 2011, paragraph 83).

Coates and Thornborrow note that in light of different researcher perspectives and decisions about how to transcribe, the same piece of video or audio material might be transcribed in many different ways (1999). Variation in transcription, choosing between what is illuminated and what is obscured, the authors consider "not a tragedy but a necessity" (Coates & Thornborrow, 199, p. 596). As Duranti notes, it is neither possible nor necessarily desirable to represent an original instance of social interaction in its entirety (2006). Ochs notes that transcripts containing too much information and detail are difficult to follow and assess, suggesting "a more useful transcript is a more selective one" (1979, p. 44). The process of selection might therefore be positioned as part of analysis, selectively engaging with video in ways shaped by the researcher's interest and theoretical position.

In addition to analytical insights, transcripts have a rhetorical purpose, acting as ways of developing an argument and leading the reader through the research findings. In this way, transcriptional choices must be made about not only *what* is included in the transcript for purposes of analysis, but also *how* it is represented in order to be accessible to a particular audience. Considering the enduring print-based tradition of academic journals, this usually calls for transcripts that can be presented on the printed page or page-like screen, where form might

also be shaped by publishers, editors and the technological constraints of the medium (Slembrouk, 2007).

The growing recognition of transcription as a transformative process shaped by theory and researcher purposes has led to calls for increased reflexivity, examining transcription as a key aspect of social research (Bird, 2005; Davidson, 2009; Roberts, 1997; Vigouroux, 2007). Whilst there is a growing body of literature related to the practice of transcription, including theoretical perspectives (Bucholtz, 2000; Judith Green, Franquiz, & Dixon, 1997; Ochs, 1979; Roberts, 1997) and explication of conventions (Du Bois, 1991; Jefferson, 2004; McWhinney, 2000), it has been noted that there is often an absence of discussion about transcription in research project reports (Davidson, 2009; Stelma, 2009). Lapadat and Lindsay suggest that too often the focus has been on seeking to standardise transcription techniques at the expense of methodological researcher reflection on the practice of transcription itself (1999). My thesis seeks to address this issue by critically examining the process of transcription and embedding reflexive discussion of transcription within each of the case study chapters that follow.

The Challenge of Multimodal Transcription

As this review highlights, transcription has increasingly been problematised and scrutinised, yet the complexities of transcribing are multiplied further when the researcher is interested in multimodality and seeks to represent data in multimodal forms. As Bezemer and Jewitt note:

> Where first we only had to attend to the gains and losses involved in a move from speech to writing, now we also need to address gains and losses resulting from a move from gesture, gaze, posture and other embodied modes of communication to image, writing, layout, colour and other graphic modes available in print. (2010, p. 187)

Whilst some disciplines have developed highly specialised forms of transcription (e.g. Conversation Analysis) and while practical fields make use of their own notation systems (e.g. Laban dance notation), multimodal transcription has only recently become a subject of discussion, and there is certainly no canonical tradition. Slembrouk suggests that rather than adopting established transcription systems based on their widespread usage, researchers interested in analysing interaction ought to "engage afresh with the question of notational conventions and representational-interpretive priorities" (2007, p. 823).

Researchers adopting multimodal perspectives have attempted multimodal transcription in a multitude of inventive ways. Designs have included combinations of devices such as video stills (Baldry & Thibault, 2005; Gillen & Cameron, 2017; Heath et al., 2010; Norris, 2004), drawings (Bezemer, 2008; Goodwin, 2000; Mavers, 2009) and use of musical notation (Erickson, 1996; Falthin, 2015; Ideland, 2013), variously making use of different layouts such as timelines, vignettes, scores and grids. Transcripts themselves have also been the focus of academic

discussion and analysis. Flewitt, Hampel et al. (2014) discuss a selection of approaches to transcription of dynamic data from research fields including applied linguistics, visual ethnography and computer-mediated communication. Bezemer and Mavers (2011) use a social semiotic framework to account for transcripts as artefacts, comparing transcripts dealing with video from disciplines including conversation analysis, discourse analysis, social semiotics and micro-ethnography. Authors have also undertaken to describe and share their own approaches to the multimodal transcription of video (Baldry & Thibault, 2005; Bezemer, 2012; Norris, 2004), and have discussed the manipulation and fixing of transcripts into different forms at different stages in the research process, showing the variation possible in transcription within one study (Gillen & Cameron, 2017; Mondada, 2007). Such studies suggest that variation is a characteristic of multimodal researchers seeking to transcribe video, necessitating a need to reflect carefully upon the gains and losses of each transcript's particular design.

Ochs proposes that a greater awareness of transcription means not only will we be able "to read much more off our own transcripts, we will be better equipped to read the transcripts of others", in turn helping our evaluation of interpretations of data (1979, p. 72). In understanding new technologies and the process of transcription, Duranti suggests that "we need to find out and then clarify what one type of inscription can or cannot capture and what another type of transcription can or cannot reveal", by critically reviewing our own and others' transcripts (2006, p. 306). This thesis seeks to turn attention towards a particularly challenging aspect of multimodal research, sharing my own attempts at transcribing the multimodal activity of child-initiated play through situated examples of transcripts of a range of play episodes, accompanied by reflexive commentary.

Chapter Four: Methodology

In order to explore child-initiated play from a multimodal social semiotic perspective, apt research methods for attending to the complex ways children make meaning in multiple modes are required. This chapter outlines the methodology adopted in the study, beginning by outlining the epistemological foundations underpinning the research. The research design is described in light of the wider developing field of multimodal methodologies, and the use of ethnographic case studies, teacher-research and observational video-based methods are discussed. The research sample (setting and participants) and sampling strategy are described before the process of multimodal analysis is outlined. Building on the theoretical perspective on transcription outlined in Chapter Three, the perspective and practical approach to multimodal transcription undertaken in this study is described. Regard for ethics has permeated the research at every stage, and key ethical issues are outlined including measures taken. The chapter concludes with consideration of validity, reliability and limitations of the study.

Epistemological Foundations

The research questions locate the study within a constructivist paradigm, shaped by the ontological assumption that reality is socially constructed (Crotty, 1998). The research therefore sets out not to uncover an objective, universal 'truth', but instead adopts an interpretivist epistemological stance in which human action is interpreted within the context of social practices, where knowledge is partial and perspective-dependent (Kuhn, 1996/1970). As such, the methodology rejects the positivist, empiricist view of traditional science which implies the social world can be known through measurement and quantification. The study is instead part of a qualitative tradition, seeking to understand phenomena through researching the situated, contextual and complex meanings participants construct. Simultaneously, such a stance reflects the context-dependent perspectives of the researcher, acknowledging the insights and limitations of researcher-as-instrument. This study therefore sets out to explore the multiple facets to children's meaning-making as they engage in child-initiated play, and to reflect particularly on the role of researcher-as-transcriber.

Critics of qualitative research have suggested the approach can lack rigour, is too subjective and fails to produce generalizable findings (Denzin & Lincoln, 2000; Hammersley, 2008). Such critiques tend to draw upon traditional notions of positivist scientific inquiry and are increasingly challenged, with the hard division between qualitative and quantitative paradigms also becoming increasingly contested (Gage, 1989; Tashakkori & Teddlie, 1998; Bryman, 2006). A strength of an interpretive paradigm is that it highlights the complex duality of meaning-making engaged in by both the participants and the researcher and acknowledges the researcher's own interpretations and subjectivities. In her study of children's meaning-making in a nursery, Pahl defends the place of interpretive perspectives, suggesting that "subjective meanings, combined

with close description and rigorous analysis of data, can offer deeper understandings of the complex work of creating that children are constantly engaged in" (Pahl, 1999, p. 16). Such a perspective challenges the assumption that subjectivity need necessarily be a problematic feature of interpretive education research (Counsell, 2009).

My study focuses on child-initiated play in one nursery classroom in England, and so can be considered a small-scale and fine-grained case study. This is seen as beneficial for supporting close attention to the detail and complexity of play. An enduring critique of interpretive, qualitative research is that it lacks generalizability beyond the situation in question and so has limited relevance or wider significance (Denzin & Lincoln, 2000; Hammersley, 2008). However, Yin argues that the focus of qualitative research is not to generalise populations or universes but to expand and generalise theories and theoretical propositions (Yin, 2009, p. 15). As such, the aim of this study is analytic generalisation, not statistical generalisation, creating valuable insights into children's play and how it might be transcribed through resonances with key theories in the field.

Research Design

The multimodal social semiotic perspective outlined in the Chapter Two is central to all aspects of this study. It is inherent in the overall aims and research questions, at the core of the theoretical framework, and so inevitably shapes the methodology and choice of methods. Mills and Birks (2011) call for 'methodological congruence' between the aims of the research, the position of the researcher and the approach employed to achieve the aims. A multimodal social semiotic approach is seen as the thread connecting each of these dimensions. My study can therefore be considered an example of 'doing multimodality' rather than selectively adopting multimodal concepts, as multimodality is central to the research rather than marginal or incidental (Jewitt et al., 2016). It is hoped that being explicit and reflexive about the influence of multimodal social semiotics on each aspect adds coherence to the overall research design.

Whilst multimodality is an increasingly common focus in research, multimodal methodologies are still under construction and the subject of much debate. As well as innovating new approaches, multimodal methodologies might build on earlier traditions, adapting existing approaches and developing new tools in order to examine communication beyond language (Jewitt et al., 2016). In this way, my multimodal study makes use of an ethnographic case study approach, drawing upon aspects of teacher-research, and making use of video-recorded observation in order to innovate new forms of transcription. Each of these aspects of the study is outlined below in order to provide a clear rationale for the research design.

Case Study

The broad aim at the outset of the study was to explore child-initiated play in the early years. To investigate this, I returned to the nursery school where I had worked as a class teacher in order to collect ethnographic video observations of child-initiated play among the group of three and four-year-old children I had previously taught. The children were well known to me as I had been their class teacher from September 2011 to May 2012, and returned to the classroom to undertake the fieldwork during their final weeks in the nursery class in July 2012. The setting had changed very little in the interim apart from a new class teacher taking over my role. The change in role from teacher to researcher entailed both gains and losses, as will be discussed further throughout this chapter.

I observed and video-recorded the children's play in the nursery over a typical fortnight. These recordings were supplemented by informal discussions with the children, photographs of things they created and fieldnotes written up at the end of the day. This fine-grained, in-depth qualitative approach is characteristic of a case study, defined by Yin as "a strategy for doing research which involves an empirical investigation of a particular phenomenon within its real life context using multiple sources of evidence" (Yin, 1981, cited Robson, 2002, p. 178). I therefore sought to re-immerse myself in the classroom which I knew well, paying particular attention to the children's play in order to closely examine its complexity. Pahl, whose research into children's model-making involves a similar case study approach, notes that "by minutely studying a group of children and their texts, a composite picture can be built up" (1999, p. 15). This rationale can be likened to Schofield's proposition that the goal of a qualitative case study is "to produce a coherent and illuminating description of and perspective on a situation that is based on and consistent with detailed study of that situation" (Schofield, 1989, p. 93). My aim was therefore to create a vivid picture of child-initiated play in this nursery, and to then experiment with the forms this may take in transcription.

My case study centres upon one nursery class in a Children's Centre, where the group of children were 3-4 years of age at the time of recording. In one sense, the classroom was typical of many other nursery schools in terms of its layout, curriculum, resourcing and staffing, and so the insights generated in my case study may resonate with other settings of its kind. In another sense, the classroom was of a case of particular 'intrinsic' interest (Stake, 2000) since it is the classroom where I taught prior to starting my PhD research. My experience of the setting as teacher offered a unique case for exploration that would not have been offered by any other Nursery. It also offered an interesting duality between teacher and researcher roles, providing insight into the potential synergies between academic transcription and the professional representation of children's learning undertaken as a teacher.

Limiting the study to one classroom and one group of participants (a class of 20 children) allowed for a particularly rich and fine-grained exploration of a bounded real-life context. I did not have 'focus children' within the group, but followed a flexible approach to recording play episodes as they emerged and unfolded. The scale of my study was not expanded for risk of losing the particulars of the individual cases. The small-scale, fine-grained scope of case studies has implications for the wider generalizability, although there are convincing arguments suggesting that generalizability need not be emphasised in all social research (Denzin, 1983; Feagin, Orum, & Sjoberg, 1991). For instance, Bryman (2006) highlights that case studies can make valuable contributions through generating theory, and Stake reminds us that there can be particular value in the reader's interpretation of individual cases:

> Readers assimilate certain descriptions and assertions to memory. When the researcher's narrative provides opportunity for vicarious experience, readers extend their knowledge of happenings … The reader comes to know things as told, as if he or she had experienced it. (Stake, 2000, p. 442)

The case study is therefore seen as an apt approach for offering rich, detailed insights and interpretations of particular cases which may resonate with the reader and their own experiences which are generalizable to wider theory.

Whilst the broad focus of the case study was child-initiated play, the observations revealed a range of different play activities and have been presented in the findings chapters that follow as a set of four in-depth play case studies, discussing an episode of computer play in Chapter Five, of pretend play in Chapter Six, of block play in Chapter Seven and running play in Chapter Eight. These case study chapters offer individual examinations of different play episodes and different transcription designs, but have a common structure and a shared focus on child-initiated play.

An Ethnographic Perspective

Ethnography typically draws on traditions from its origins in social and cultural anthropology, often emphasizing the importance of prolonged, in-depth fieldwork in situ (Heath & Street, 2008). However, my time collecting data was short; two weeks as opposed to the many years which ethnographers might typically spend researching a group. There has increasingly been acknowledgement of greater flexibility and diversity in ethnography as it has evolved over recent decades (Street, 1995). Green and Bloome (1997) make an important distinction between 'doing ethnography', 'adopting an ethnographic perspective' and 'using ethnographic tools', highlighting that researchers may engage with ethnography in various ways, and to differing degrees. As such, my study can be considered as being framed by an 'ethnographic perspective' as opposed to 'doing' classic ethnography.

Ethnographic research typically seeks to provide description and interpretation of a culture and organisation of a social group (Robson, 2002). My case study adopts an ethnographic perspective on child-initiated play in a nursery school. As is characteristic of an ethnographic study, my research observed a natural setting rather than under test conditions in artificial situations, looking for insights into the meanings constructed by the children themselves through their typical play practices. The presentation of the findings as detailed cases is also in keeping with an ethnographic approach, which tends to aim for the production of 'thick description' (Geertz, 1973) so that others might be able to understand the culture from the inside.

My case studies draw particularly on traditions of ethnomethodology and microethnography through a close focus on the minute details of interaction and how they constitute the social meaning-making of play. Microethnography has contested the view that ethnography need necessarily involve prolonged time in the field, instead placing emphasis on the detail of naturally occurring social encounters unfolding in real-time (Erickson, 1992; Garcez, 1997; McDermott, Gospodinoff, & Aron, 1978). Such an approach has much in common with ethnomethodology, focusing close attention on how people use everyday 'methods' to organise their social life (Garfinkel, 1967/1984). Whilst such an approach may have initially emphasised conversation and positioned other modes within the disconnected and subordinated focus of 'context analysis', research in the field has increasingly accorded greater attention to unspoken behaviours in face-to-face interaction (Erickson & Shultz, 1982; Kendon, 1990; Streeck, 1983). There are several parallels between such an approach and those who seek to incorporate multimodal dimensions into Conversation Analysis (e.g. Duranti & Goodwin, 1992; Goodwin, 2000; Heath & Hindmarsh, 2002).

In attempts to understand children's everyday communication and interaction in forms beyond language, a number of researchers have turned to combining multimodality and ethnography (e.g. Clark, 2011; Kress, 1997; Lancaster, 2001; Pahl, 1999; Rowsell, 2011). Both ethnography and multimodality aim to produce detailed accounts of cultural practice and the diverse resources people use in their everyday lives. However, questions have been raised about the epistemological compatibility of the two practices, highlighting the different theoretical and methodological traditions and their respective analytic procedures (Dicks, Flewitt, Lancaster, & Pahl, 2011; Dicks, Soyinka, & Coffey, 2006; Flewitt, 2011). Pink argues that ethnography and multimodality are "based on fundamentally different theoretical premises and methodological approaches" (2011, p. 262) and advocates sensory ethnography as a more holistic, empathetic approach to understanding the experiences of participants.

In contrast, Kress (2011) suggests there is a 'path of complementarity' from which both multimodality and ethnography might benefit from the specialised insights of the other, whilst recognising the limited 'reach' of each perspective. Despite her reservations, Pink (2011) acknowledges some compatibility between multimodality and certain types of ethnography

(which she categorises as 'observational' ethnography) and of the potential role of ethnography in supporting reflexivity within multimodal analysis. Hurdley and Dicks (2011) similarly advocate a stance which recognises both the potentials of each approach and their respective gaps, attempting to articulate a 'third space' where both multimodality and ethnography might each enrich the insights of the other. It is on this tradition which my own study builds, seeking to recognise the depth of insight into social contexts offered by ethnography, and also the value of detailed examination of situated meaning-making in multiple forms offered by multimodality. In combination, I suggest these approaches offer a nuanced yet detailed insight into the play of young children in a nursery setting.

Dicks et al. (2011) suggest that debates surrounding the compatibility of multimodality and ethnography are on-going, and that the insights of those working 'at the intersection' are particularly valuable in developing and evolving methodological approaches. My study contributes to a growing tradition of combining multimodality and ethnography in an attempt to recognise objects, places, spatial and embodied features as more than simply detail, background or context, instead seeking to recognise their meaning in social practice. My aim in this thesis is to make a particular contribution through problematising the ethnographic concept of 'thick description' (Geertz, 1973) widely used in sociology and anthropology, an approach which has traditionally relied predominantly on lengthy written observational field notes to explain human behaviour in particular contexts. The present study's focus on visualising play can be seen to examine new possibilities from a multimodal perspective, moving from 'thick description' to 'thick *transcription*', where writing is not always presumed to be the most apt form for representing and analysing multimodal data.

Teacher-Research

Although my video recordings were collected in a short space of time, my familiarity with the setting had been developed throughout my four years teaching in the early years centre, and informed the ethnographic perspective. Through this practical experience I gained a deep understanding of the classroom layout, its routines, the curriculum and the day-to-day, month-to-month, year-to-year practices. As Cochran-Smith and Lytle (1993) note, teacher-researcher familiarity extends beyond knowledge of the participants to include experience and understanding of the community and culture of the school and classroom. My role as a teacher therefore offered insights from 'within', whilst my role as a researcher enabled me to focus solely on fieldwork and afforded the time to examine the data in fine-grained detail. In this way, my teacher-researcher role offered a rich background to the video clips I recorded during the period of fieldwork through long-term immersion, characteristic of much ethnography. I acknowledge, however, that this position entails a different identity to that assumed by a traditional ethnographer who typically enters the research site as an 'outsider' and seeks to gradually gain an 'insider' perspective (Geertz, 1973; Schieffelin & Ochs, 1986). My time

teaching in the nursery meant I was very much an 'insider' of the school, researching the community of which I was myself a part. As well as bringing the numerous benefits discussed above, it raised certain tensions which must be acknowledged.

An aim of ethnography is often considered to be the process of making the strange familiar and the familiar strange. This was undoubtedly a challenge given my close connection to the setting and history as a teacher there. Whilst I was an 'insider' in the school in my role as a teacher-researcher, my focus was the children in the nursery and it was impossible not to be an 'outsider' in relation to their play practices. As Pahl notes in her study of play in a nursery, "I was both of, and not of, this group of people" (1999, p.13). Whilst I belonged to the community of the classroom, there are limits to the extent an adult can ever expect to identify with, or be accepted into, a group of young children. In this sense, whilst I was an 'insider' of the school context, I continued to be an 'outsider' in relation to child-initiated play.

My joint identity as (former) teacher and (present) researcher might be considered to encapsulate the on-going 'dance' or 'dialogic self' discourse between insider and outsider perspectives (Bakhtin, 1986; Gregory & Ruby, 2011). This reiterates the importance of reflexivity in which reflection upon identity in the research process and careful consideration of 'researcher as instrument' is key (Simpson & Tuson, 2003). I have sought to mitigate against possible 'insider' biases or assumptions by ensuring my data analysis procedures were systematic, principled and rigorous (see analysis section, below), and through aiming to weave a thread of reflexivity throughout my study. In this way, I attempt transparency regarding my own positionality in the research and aim to recognise both the affordances and constraints of teacher-research.

A further issue raised by my teacher-researcher identity related to my existing relationships with the participants. The staff, children and their families were well-known to me. As I returned to the school as a researcher, I was mindful that the staff were likely to see me as a colleague or friend, and that the children and families may still see me as a teacher. It brought benefits in terms of familiarity and trust, leading to ease of access to the research site and granting of consent, yet I was mindful not to take this trust for granted. In the section on ethics at the end of this chapter I outline the ways in which I attempted to be transparent about the research and make clear the right not to participate, and in particular the sensitivity and complexity of this issue with research involving young children.

Whilst there are positive aspects to a teacher-researcher role, it has been the subject of much debate, with Hammersley proposing that, "while teacher research might be useful, it is no substitute for educational research of a more conventional kind" (1993, p. 226). This suggestion opposes the likes of Cochran-Smith and Lytle who consider teacher-researchers to possess "unique perspectives", which they suggest might be of greater relevance and significance to the

audience of education research than that which is traditionally generated in academic establishments (1993, p. 5). The authors further suggest that teacher research holds emancipatory potential in terms of its challenge to the notion of 'teacher as technician', proposing that teacher research might not only benefit individual professionalism but also have the power to enable education to "reform itself from within" (1993, p. 22).

These possibilities resonate with features of the Reggio Emilia approach, where research is considered "a normal part of daily life for the infant-toddler centres and preschools, and not something reserved only for academics and universities" (Brunton & Thornton, 2009, p. 86). Rinaldi (2006) speaks of the symbiotic relationship between theory and practice, and calls for all practitioners to be recognised also as theorists, proposed by Malaguzzi as "the right of the teachers and workers of each school to contribute to the study and preparation of the conceptual models that define educational content, objectives and practices" (1993, p. 215). Despite the challenges that conducting a study in a teacher-researcher role brings, this approach offered many insights, including the potential to make connections between theory and practice. In particular, my teacher-researcher role supports me to make tentative connections between academic transcription and the professional representation of children's learning undertaken as a teacher. These insights enable my study to raise possible implications and recommendations for practice, in addition to discussion of theory (see Chapters Nine and Ten).

Observation

Ethnographic observation was chosen as the primary means of studying play as it offered first-hand insights into what children actually *do* in their Nursery setting when a range of materials and places for play are routinely available to them. Participant observation is commonly used as a method in ethnographies to gain insight into particular groups and cultures. For instance, in her ethnographic study of children's model-making in a nursery, Pahl comments that "by observing closely what the children actually did in a nursery, I was able to see how they formulated their ideas. I became immersed in the worlds of the children and their preoccupations" (1999, p. 13). I employed a similar approach, taking brief notes during my time in the classroom and writing these up more fully at the end of the school day. These observations elaborated on the video-recordings of child-initiated play and allowed space for my own reflections. My reflections became part of my research journal and prompted 'reflexivity' upon the study itself and my role within it (Robson, 2002).

Rather than attempting to quantify play, the use of "researcher as instrument" was favoured (Simpson & Tuson, 2003, p. 79). I did not use a structured observation schedule as it was felt it would be reductive and would not be able to accommodate the complexity of the research site, including the variety of different interactions that were occurring and the dynamic and changing

nature of the classroom. During the fieldwork I took the position of a participant-observer, being overt about my research intentions yet also involving myself in many of the everyday classroom activities. While the children were engaging in child-initiated play I tended to adopt a more 'marginal observer' position (Robson, 2002) as I did not wish to disrupt or disturb the children, or risk the play becoming adult-led.

I was nonetheless aware that my very presence may have unwittingly affected the children's play. To set children at their ease, I adopted the role of reciprocal researcher in line with Oakley's assertion that we gain "no intimacy without reciprocity" (1981, p. 49). The children were therefore told about the purposes of the research in simple terms and any questions the children had were answered as honestly and clearly as possible. I hoped that in providing the children with an experience which was not worrying, stressful or dissimilar to their usual nursery routine, the children's responses would be more authentic and that they would gain some satisfaction from participation.

Directly observing play in a dynamic, busy classroom is highly demanding. Video was used to record observations as it provided a rich, multimodal record of play which may otherwise be overlooked as momentary and fleeting. The qualities of video also supported the opportunity to revisit and analyse observations in close detail (Jewitt, 2012; see also Chapter Three). Video was therefore the central method of data collection in the study.

Using video to record observations of children is fairly common practice by teachers in early years settings, as is documentation of play using cameras, clipboards, notepads and Post-It notes. These practices form part of a cyclical approach to planning, documenting and assessing children's learning based on interpretations of their play (British Association for Early Childhood Education, 2012). In this way, the children were used to me observing them in my previous role as a teacher, including sometimes observing their play using a video camera. For my research, I aimed to observe child-initiated play as a teacher might, recording instances of child-initiated play in a range of situations. However, I inevitably also brought my research agenda to the process of observation, namely my aim to record a wide range of child-initiated play which might be analysed and transcribed using a multimodal lens. The resulting observations reflect these joint aims, and the video clips selected for close analysis feature instances of play in different situations and contexts, for instance, solitary play, child-to-child play, technologically mediated play, group play and play with objects (e.g. construction materials, mark-making resources).

I was particularly mindful that the way the video camera was used during the data collection phase would inevitably shape the resulting video record. My use of the camera was influenced by the types of play the children engaged in and the constraints and affordances of the different play spaces. It required some video recording decisions to be made in situ and in response to the action as it unfolded (for example, a close-up on children completing a stationary puzzle

activity, and tracking and panning across action during a running game) rather than deciding upon a fixed protocol for using the camera in advance. Rather than seeing as problematic, I have adopted a constructionist stance which considers video as a particular perspective on events, and as necessarily selective (Jewitt, 2012), mediated by the technology of the camera (Duranti, 2006).

During my observations, the children interacted with me in much the same way as when I had been their teacher. This was reassuring, as it suggested the children were comfortable with my presence and that my teacher-researcher role seemed to reduce 'reactivity' (Lincoln & Guba, 1985). However, as well as bringing benefits, the children's view of me as their teacher also posed some challenges. For instance, children would sometimes come to me to resolve their disputes, answer questions or give them assistance while I was videoing, which I usually reciprocated, sometimes at the expense of collecting data. Whilst such responses might have sacrificed moments of data collection, the children's wellbeing was considered to be of greater importance. In such instances, fieldnotes were valuable for 'filling the gaps' of what happened before and after video-recording.

Alongside the benefits, there was an ethical dimension to blurring teacher and researcher roles in observation. On the one hand, the children seemed to behave as they 'naturally' would with a teacher in the classroom, yet I did not want to use the children's perception of me deceptively or exploitatively for the purposes of collecting data. With this in mind, I aimed to observe respectfully and sensitively in the way I would have as a teacher, so as to minimise anxiety or disruption to the children's routine, whilst being as open as I could about my presence and purpose to both the children and their guardians. Further discussion of this process is outlined in the section on ethics below.

Research Site and Sampling

Owing to the localised nature of the study, and the particular characteristics of early years settings, description of the school and the group of children is necessary as background to the findings chapters which follow.

The School

The research was conducted in a large Early Years Centre which offered combined provision of state-funded nursery education for children aged three to four, privately-funded childcare for children aged two to four, and family outreach programmes run through the integrated Children's Centre. The centre is located in a large village on the outskirts of a city in the south of England, serving a number of smaller villages and providing 'outreach' activities to local

communities including a nearby traveller site. In the year the fieldwork took place, the centre had been inspected by Ofsted and was judged ‘Outstanding’.

The particular context for my study was the nursery school, where I previously taught children aged three and four in one of two parallel nursery classrooms, each with places for 20 children. The children at the focus of the study attended the nursery school for 15 hours per week over two-and-a-half consecutive days, and some of the families also made use of the centre’s additional wraparound childcare and family services. A teacher and a nursery nurse worked in each nursery classroom, supported flexibly by teaching assistants who usually offered one-to-one support for children identified as having special educational needs.

Figure 4.1: The nursery classroom

Figure 4.2: The nursery classroom

The centre was modern and open-plan, as was the layout of the nursery classroom (see Figure 4.1 and 4.2). The nursery environment reflected the framework for teaching and learning in the Early Years Foundation Stage (Department for Education, 2017), with a strong emphasis on learning through play, both adult-directed and child-initiated. This included a free-flow approach to 'continuous provision' of a range of experiences and resources both indoors and in the shared outdoor play area, including books, construction equipment, mark-making materials and ICT. In addition to this continuous provision, enhanced provision was supplied in response to the children's emerging interests and practitioner observations of the children. This planning was generally short-term, taking inspiration and direction from the interests and motivations of the children rather than a predetermined series of 'topics'. The centre's practice was influenced by the Reggio Emilia approach, with several staff members and the head teacher having visited the Italian preschools.

The school was selected as the site for fieldwork owing to my previous work there as a teacher and the advantages this offered for research insights. In this way, my sampling is purposive, a typical strategy for flexible, qualitative research designs (Robson, 2002). A further advantage of this setting is that it is typical of most nursery settings in its play-based approach to early years education, with a particular emphasis on child-led learning which enabled me to routinely observe a variety of child-initiated play.

The Children

The class of 20 children consisted of 14 boys and 6 girls; an unusually high proportion of boys for the nursery in that academic year. As the fieldwork was undertaken late in the academic year, most children were four years old at the time of the research, although four of the children were turning four over the summer. According to data from the centre's Ofsted report, most children attending the centre are of White British heritage. The proportion of children known to be eligible for free school meals and the number of children identified as having special educational needs were below the national average.

All parents gave consent for their children to be involved in the research to varying degrees (see ethics section below). As outlined above, my observations sought to observe child-initiated play as a teacher might, and to record a range of different play types. In this way, I did not have 'focus children' within the group, but followed a flexible approach to recording play episodes as they emerged and unfolded. All children were recorded playing at some point during the fieldwork, although only four episodes of play have been included as case studies for in-depth discussion in the thesis. As the proportion of boys in the class was unusually high this has been reflected in the case studies, which feature more boys as central protagonists than girls.

It is important to note that direct comparisons between children in the case studies are not being suggested, since the children all brought with them a wealth of different social and cultural influences, including the vital role of the home environment. It was hoped that by involving all the children in the class, this would provide rich data which illuminated the many facets of child-initiated play and enabled a range of data which could then be analysed systematically and presented selectively.

Data Analysis

The previous chapter outlined the potentials and challenges of video as a means of recording child-initiated play from a multimodal social semiotic perspective. As multimodal research has gained attention and increased in uptake, attention has also turned to the analytic tools necessary for such an approach (Jewitt, 2014). Social semiotic multimodal analysis is principally concerned with the connections between "signs, sign makers, interest and the choice of modal and semiotic resources used in a text" (Jewitt et al., 2016, p. 77), where 'text' goes well beyond traditional print-based associations to encompass multiple, multimodal forms. Social semiotic analysis typically involves intensive engagement with artefacts (e.g. textbooks, toys, drawings), although it is increasingly being adapted for analysis of video-recorded face-to-face interaction (Bezemer, 2008; Bezemer et al., 2011; Gillen & Cameron, 2017; Kress et al., 2005).

Social semiotic multimodal analysis "combines a conceptual and empirical focus and requires the analyst to be highly responsive to the research materials that they are working with" (Jewitt et al., 2016, p. 77). As the particularities of the research materials and their context need to be considered carefully, an oversystematised formulaic approach to analysis, such as inventories, is usually avoided with multimodal social semiotic perspectives. This study is therefore an interpretive account, which acknowledges and employs the benefits of "human intuition, insight, sensitivity to the nuances, complexity, and subtleties of social behaviour and communications" (Simpson & Tuson, 2003, p. 82). It is vital to remain aware of the subjective nature of the researcher's own understanding wherever qualitative analysis is used, as our insights are always partial and informed by our own perceptions. As such, a reflexive stance is crucial, and analytical claims must be rigorously grounded in the data. The intention is that reflection upon this subjectivity, as well as clear explanation of the process of analysis, helps illuminate the approach taken.

Stages of Multimodal Analysis

Having video-recorded approximately 250 minutes of children's play, supplemented by photographs and fieldnotes, the first stage of analysis was becoming familiar with the data. This was achieved through repeated re-watching of the video clips in the weeks immediately after

data collection. Analytical reflections were recorded in a research journal, allowing me to record and speculate upon my initial interpretations.

The second phase of data analysis involved systematically logging each video clip chronologically to get a coherent overview of all the play episodes I had collected. The clips were mostly short (around five to ten minutes each), reflecting the types of 'snapshot' observations of play early years teachers themselves are likely to record. I rewatched the video clips, methodically recording key details about each clip. Knowing that I wanted to select a range of play episodes for in-depth analysis, I noted features such as where the play occurred, duration, which children were involved, and the type of play broadly corresponding to Hughes' play types (Hughes, 2006). Many of the play episodes seemed to fit into multiple categories and so often two or more play types were simultaneously noted. For each episode, I additionally wrote a brief descriptive summary of the play episode to enable me to easily recall the content of each recording. An example extract from the video log can be found in Appendix A.

The third phase was selecting play episodes for closer, in-depth analysis. This was a particularly challenging phase of the research, as all episodes were potentially of interest and could have formed the basis of case studies in their own right. I first discounted episodes in which the recording quality was too poor or which had been interrupted and appeared problematically incomplete. From the remaining episodes, I purposively selected episodes which represented a range of the play types identified in the second phase of analysis and which represented a variety of different resources and locations. Piantanida and Garman note that "as researchers become more acquainted with … the stable records, some information begins to emerge as more interesting or significant" (1999, p. 170). Through this familiarity and systematic logging, a selection of the episodes were identified as being of particular interest in relation to the research questions as showing different types of play which could pose challenges for 'traditional' transcription. These selected clips were viewed with my research supervisors to gain multiple perspectives on the data and to decide on the episodes for fine-grained analysis. The four episodes finally selected for multimodal analysis represent much of the diversity of the play observed in the full data set, including both indoor and outdoor settings, play in larger groups and pairs, play in single-sex groups and mixed groups, play with and without objects, play in enclosed spaces, play in a wide open space, and so on.

The fourth phase was fine-grained multimodal analysis, supported by the design of multimodal transcription techniques and styles that captured the specific characteristics of each play type. As multimodal transcription is a central methodological focus of the study, the particular approaches taken to transcribing and analysing each of the four play episodes selected for close analysis are presented in detail in a series of four case study chapters. An approach common to all four case studies was the use of *ELAN* as an analytic tool. *ELAN* is free software developed by the Max Planck Institute for the creation of annotations on video and audio

recordings. Whilst it has the potential for highly complex annotations and quantitative analysis, it is fairly adaptable in its use and has been employed in various ways by researchers seeking to transcribe and analyse multimodally (Bezemer, 2012; Mondada, 2007). Although a useful tool, *ELAN* is rather limited in terms of its options for outputs, leading to many researchers remaking their final transcripts in other forms (Bezemer, 2012; Cowan, 2014a, 2014b; Kress & Cowan, 2017) or including *ELAN* screenshots as transcripts within publications (Mondada, 2007).

ELAN enabled close re-watching of the play episodes (e.g. in slow motion and speeded up, with and without sound) which drew attention to the different modes within each episode (Jewitt, 2012). It also supported annotation of the video, through creating different 'tiers' along a horizontal timeline relating to different participants and the modes they used (Bezemer, 2012). This acted as a first stage of transcription. As with approaches such as Conversation Analysis, transcription was seen as a vital analytic tool as well as a rhetorical device. Jewitt et al. outline the particular importance of transcription in multimodal analysis:

> Detailing how actions unfold moment by moment helps you develop new insights, and it enables you to render those insights visible and present them to audiences who do not have access to the video clip on which it is based. (2016, pp. 66-7)

The process of transcription enabled me to artificially separate out modes to consider the different semiotic work each was contributing to the overall ensemble, whilst viewing them within a whole. This process enabled me to speculate upon the interests of the sign-makers. In this way, the act of transcription, and close scrutiny of the transcripts themselves, offered analytical insights which are discussed in detail in the findings chapters which follow. These multiple case studies are used to support analytical generalization through providing multiple sources of evidence to give various perspectives on the multifaceted phenomena of play.

Having transcribed and analysed the four play episodes in detail, I then reviewed the case studies analytically to identify shared themes, which are discussed in Chapter Nine. I looked across episodes for comparisons and connections (Maxwell, 1998) and instances of 'crystallisation', where different episodes illuminated particular concepts (Janesick, 2000). Such an approach highlighted 'rich points' worthy of further discussion (Agar, 1996). Since the processes of analysis and transcription design relied on use of the 'researcher as instrument', the developing interpretations were shared with my research supervisors and other members of the MODE team. Of particular value were a series of video analysis sessions run as part of the MODE project which enabled me to share video extracts, transcripts and emerging analytic themes with other multimodal researchers. It not only supported the development of my own multimodal analysis skills, learning from leading experts in the field, but brought multiple perspectives to my data which tested and developed my own interpretations, ensuring these were robust and well-grounded.

Limits of Multimodal Analysis

Whilst multimodal social semiotics is growing in prevalence and is seen as providing a solid theoretical foundation for exploring meaning-making in children's play and transcription, it has been suggested that such approaches can risk losing sight of context and semiotic practices through over-focusing on artefacts in isolation (Prior, 2005). This critique has informed my decision to adopt an ethnographic perspective in my study of play, and to explore the process of transcription within and throughout a classroom case study rather than conducting an analysis of existing transcripts. To study such transcripts requires careful consideration of their original purposes, use and location (e.g. within particular journal articles) to understand the choices made in their development (see Bezemer and Mavers, 2011; Flewitt, Hampel et al., 2014). Rather than risk taking existing transcripts out of context and losing this important dimension to their design, my work seeks to present critical discussion of transcripts within the case studies they are seeking to represent. In this way, I endeavor to counter Prior's suggestion that social semiotic accounts neglect context and practices through presenting discussion of transcription embedded within a research project.

A further criticism is the suggestion that multimodal social semiotics risks reading too much into texts (Dowling, 2004). I have endeavoured to ensure that claims made through my analysis stay close to the episodes under scrutiny, using transcription to highlight the evidence for any claims made, as well as taking measures to justify the validity and reliability of my interpretations (discussed in the final sections of this chapter). Such criticisms remind us of the limits of any theoretical approach and the need to draw upon other research approaches in order to complement the particular insights offered by a social semiotic perspective.

Ethics

Ethical considerations were placed at the heart of the study, and particular attention has been given to the nature of research involving young children. As Alderson and Morrow (2011) suggest, the purpose of ethical reflection is to balance potential risks of research with likely benefits. This becomes increasingly complex when data takes visual forms, raising new challenges particularly surrounding consent, anonymity and storage (Heath et al., 2010). An embedded, situated ethics approach has been adopted (see Simons & Usher, 2000), drawing on the BERA Ethical Guidelines for Educational Research (British Educational Research Association, 2011) and the NCRM's guidelines for ethics in visual research (Wiles et al., 2008). Ethical approval for my research was granted by the Institute of Education in July 2012, prior to starting data collection (see Appendix B). Ethical issues were considered carefully not only at the outset, but throughout every stage of the research process. This section discusses my approach to key ethical responsibilities and considerations.

Voluntary Informed Consent

An issue requiring particular consideration has been my decision to return to the school where I previously taught. Whilst offering many useful insights into the setting and wider context, it necessitated a clear explanation of my role as a researcher and the focus of the study, including making sure all participants were aware that they did not have any obligation to participate. This entailed seeking voluntary informed consent from all research participants and making them aware of their right to withdraw. I was aware that many participants would be basing their decisions regarding consent on the basis of trust developed through their relationship with me as teacher. I therefore feel a particularly strong sense of responsibility towards those involved in my study and do not wish to do anything that might exploit their trust. As Flewitt argues, a responsibility applies to participants of all ages and requires the researcher "not only to establish a robust and negotiated ethical framework … but also to ensure that these ethical principles are applied throughout all stages of the research process" (2005a, p. 10).

It was vital to ensure the participants were fully informed about the research and could freely make a decision about participating at the outset and throughout. Acting as the gatekeeper to the research site, the headteacher was approached first with an information letter explaining the study and seeking permission to carry out the fieldwork in the school (see Appendix C). Having given her consent, the class teacher was then approached in the same way and gave her consent for research to be conducted in her classroom (see Appendix D). With this consent on behalf of the school, the parents and carers of the children in the nursery class were then asked to give consent on behalf of their children (see Appendix E). As with the headteacher and teacher, an information letter was provided. In addition to granting overall consent for their child to participate, the consent form asked parents and carers to 'opt in' or 'opt out' of various ways in which the data might be shared (e.g. at academic events, in publication), and this has been strictly adhered to. All participants were made aware of their right to withdraw consent and were given opportunities to ask any further questions. Parents and carers who provided me with their contact details have been updated about my findings and the ways in which the data is being used.

Whilst young children are considered to be under the responsibility of their adult guardians, the United Nations Convention on the Rights of the Child clearly states that children have the right to express their views on all matters that affect them (UN General Assembly, 1989). Having obtained parental consent, measures were therefore taken to ensure the research was also explained to the children in appropriate, accessible terms, that they could ask questions and were given opportunities to consent or withdraw their consent. I aimed to explain my presence in straightforward, child-friendly terms (e.g. "I'm interested in finding out about your play in nursery") and explained the use of video to the children in similar ways (e.g. "I'd like to use a

video camera to help me remember the things you do"). Before filming, I made the children aware that they could ask me to stop recording at any time.

Research involving young children raises many complex ethical issues, including the degree of awareness children can have about the purposes of research and how data will be used. Rather than apply the notion of 'informed consent' to research with young children, I instead adopted Flewitt's notion of 'provisional consent' (2005a), seeing consent as an on-going negotiation between the individual child and researcher. I therefore took the children's consent as a situated, minute-by-minute agreement (Simons and Usher, 2000). Knowing that children may not always feel able to verbally withdraw their consent, I aimed to be particularly aware of the subtle, multimodal signs that the children did not wish to be observed or recorded which I took as indication that consent was being withdrawn (Flewitt, 2005a).

The use of video and photographic cameras was standard practice by staff in the nursery for recording the children's learning, so my behaviour was not out-of-the-ordinary for the children and did not appear to cause any particular concern. However, since it might be potentially difficult for the children to challenge an adult who they viewed as a teacher, I aimed to be particularly mindful of moments when the children seemed anxious or upset for any reason, ceasing the recording. I alternated direct observation with video-recorded observation and tended to record short episodes of between five to ten minutes so that the children did not feel continuously monitored by the video camera. To involve the children in the process in a respectful and open way, we viewed the videos together, once I had finished filming, using the playback feature on the cameras while in situ, allowing them to see and comment on the footage I had collected. It is hoped that these measures developed a trusting, respectful, non-stressful research relationship, building positively on my existing relationship with the children and their parents as their former teacher, whilst making all participants aware of their research rights.

Anonymity and Confidentiality

An ethical issue requiring particular consideration has been the use of video and protection of participants' identity. Anonymity and confidentiality are long-established principles in social research practice, yet it becomes a challenging issue in much visual research (Clark, 2006). Visual methods of data collection in education have not traditionally had an established code of ethical practice (Prosser, 2000), although such issues are being widely debated as visual research becomes increasingly common (Flewitt, 2005a, 2006; Heath et al., 2010; Wiles et al., 2008).

Since my research was concerned particularly with the fine-grained multimodal dimensions of play, such as gaze and facial expression, it was considered beneficial to be able to use video

data in which the children's faces would sometimes be visible. This offered particular insights into many complex features of play which are often overlooked in traditional research methodologies. However, it is recognised that this raises ethical issues as participants are then potentially identifiable.

Techniques such as face-blurring to preserve the anonymity of participants were given careful consideration. Such approaches have been subject to some criticism, with suggestions that through removing identity there is a risk of objectifying people and failing to treat research participants with due respect (Wiles et al., 2011). Others have suggested that face-blurring may convey negative connotations about the participants owing to its use in the media in relation to crime (Banks, 2001). Researchers continue to adopt innovative approaches in relation to this challenging issue, such as rendering video stills as line-drawings (e.g. Bezemer, 2008) and photo negatives (e.g. Kjällander, 2011). Using such techniques, aspects like posture and gesture may be preserved, but subtle features such as facial expressions and gaze direction are likely to be lost. Therefore, whilst such techniques may preserve anonymity, they too raise new issues and challenges.

Parents and carers were asked in the consent form to express if they would prefer for their children's faces to be made anonymous through techniques such as blurring. No parents selected this option, but I nonetheless feel an on-going sense of responsibility to the children and their families regarding the careful usage of images generated in the research, both now and in the future. I am mindful not to use particularly sensitive images of the children and that all images are used respectfully only in ways agreed to by the participants. The data have only been used for the purposes outlined in the original information letter to participants. All the children have been given pseudonymns and the school is not referred to by name at any point.

Safeguarding and Safe Storage of Data

Researchers have a moral duty to protect those involved in the research. As Denzin states, "our primary obligation is always to the people we study, not to our project or to a larger discipline" (1989, p. 83). From my previous role as a teacher, I was familiar with the child protection policies of the school and held an enhanced Criminal Records Bureau disclosure. All school policies relating to safeguarding and child protection were followed closely during my time collecting fieldwork, and I ensured I did not film the children without other staff present in the classroom. The video has been stored safely and securely using password-protected files. All personal data has been stored safely and securely using password-protected files and in compliance with the Data Protection Act (1998). Data has only been shared with my research supervisors, at MODE events and at conferences in accordance with the individual participants' consent for usage.

Whilst research councils often request that researchers deposit their data in archives for future third-party research, little guidance exists on archiving video data, which raises new moral, pragmatic and substantial issues (Korkiakangas, 2014). As the study consisted of visual data of children collected on the basis of an established, trusting relationship, it was not considered appropriate to submit the data for archiving in this case. However, it adds to the imperative for further work in the field of visual research methodologies and the potentials of forms such as transcripts to act as alternative contributions to data archives.

The ethical issues I faced as a researcher resonate with the ethical challenges of use of video observation in education more broadly, for instance, issues of safe storage, data sharing, child protection and children's rights. In this way, the research has parallels that may offer insights for practitioners regarding responsible, ethical approaches in new and changing forms of classroom practice.

Whilst working with video of young children requires on-going consideration of a range of ethical issues, it is hoped that the data collected in the nursery will have positive implications for understandings of children's play and how video might be recorded, analysed and documented, both in research and potentially in classroom practice. As such, it is hoped that the outcomes of the research will potentially benefit not only practitioners and the academic research community, by advancing multimodal methodologies and ways of representing play, but also children themselves, through deepening our understanding of their play in multiple modes.

Validity and Reliability

The enduring prevalence of positivist approaches in research, particularly biological and medical sciences, can lead to particular models for validity and reliability being transplanted onto other paradigms and approaches. Criticisms often levied against qualitative research, particularly interpretive approaches such as ethnography, can therefore imply a lack of quality and rigour. Such critiques presume that the prescriptive objectivity characteristic of the traditional scientific method can and should provide a similar framework for qualitative enquiry. Those taking post-positivist stances have increasingly contested this, calling for a "radical reconceptualization of validity" and "criteria other than validity, reliability and generalizability" in qualitative research (Connelly & Clandinin, 1990, p. 7). Ensuring quality in qualitative research is therefore a complex issue. I was resistant to applying measures typically developed for positivist approaches to validity and reliability to this study, yet I am mindful of a need to ensure credibility and trustworthiness of the data and my interpretations. I outline below the approaches that were key to ensuring my study has been conducted to ensure rigour.

Reflexivity

As Hammersley and Atkinson point out, “social researchers are part of the social world they study” (2007, p. 16) and they argue that trying to isolate data which is ‘uncontaminated’ by the researcher is a futile exercise. I was therefore wary of hiding behind ‘a mask of objectivity’ (Cooper & Stevenson, 1997). Rather than positioning myself as a neutral, objective observer of children’s play, I have attempted instead to be open about my teacher-researcher identity including its potentials and constraints throughout the phases of analysis and as reported in the findings chapters. I have also attempted to reflect critically on my assumptions and biases. A key means for ensuring this was my usage of a research journal, both during my time in the field and throughout transcription, analysis and sharing of the findings. I incorporated Mason’s suggestion that the researcher “should be able to, and be prepared to, trace the route by with [they] came to [their] interpretation” (1996, p. 150) and the notion of an audit trail (Lincoln & Guba, 1985). Transcription was a particularly central aspect of this as my different transcripts at different stages in the research process acted as ‘academic artefacts’ (Bezemer and Mavers, 2011) which revealed my own interests through the foregrounding and backgrounding of different modes. In this way, my transcripts and the accompanying commentary seek to demonstrate a highly reflexive approach to an often taken-for-granted aspect of the research process.

Sharing Interpretations

Reflexivity was a vital aspect of the research for recognising my own perspectives and subjectivities. Interpretivist approaches have been drawn upon by others involved with the close description of children at work (see Armstrong, 1980) and challenges the assumption that subjectivity need necessarily be a problematic feature of interpretivist education research (Counsell, 2009). What was also particularly key to ensuring rigour whilst valuing subjectivities was working on this study as part of the MODE team, which facilitated a collaborative approach to working with visual data. Mills and Birks (2011) suggest that a vital factor influencing quality in qualitative research is the expertise of the researcher, and my research expertise undoubtedly developed through involvement in the larger MODE project alongside experienced researchers and a shared focus on multimodal methodologies.

Of particular value were video analysis sessions with other multimodal researchers which offered the opportunity to share my data and emerging interpretations. This supported me to check whether I was in danger of reading too much into certain episodes (Dowling, 2004) and to identify my possible interpretive biases. Through such sessions I could also check the responses of others to the transcripts I was developing, including what readings the designs intentionally or unintentionally facilitated. These sessions, in addition to regular data sharing

with my supervisors, were extremely valuable for testing and reshaping my interpretive insights and ensuring my analysis was thorough and substantiated by evidence.

Triangulation

Qualitative research often makes use of triangulation in order to enhance validity and demonstrate rigour by using multiple methods to examine a particular phenomenon (Robson, 2002). Whilst video observations of play episodes were my primary form of data, this was supplemented with participatory observation in the nursery, longer-term ethnographic insights offered through my teacher-researcher role, informal conversations with the children, field notes and reflections documented in my research journal. In this way, insights from multiple methods enriched the video-recorded episodes of play and supported analytical insights and checking of interpretations.

An issue which can arise in multimodal research is the accusation of overlooking context and reading too much into artefacts in isolation. Whilst such critiques have been contested (see Jewitt et al., 2016), a typical response is the suggestion that those being observed should be asked about what they are doing or making, implying that this could confirm or disprove the researcher's interpretation. Whilst such an approach might, in some methodologies, be considered a form of triangulation, I would suggest that it raises problematic tensions in relation to multimodal research. Asking participants to verbally explain their actions after an event inevitably involves the creation of an altogether new sign in a new social context. Furthermore, we risk making the assumption that participants are able to put complex embodied experiences into words, and may problematically privilege language as having the greater claim on 'truth'. If I had asked the children what they were doing or making in their play, for instance, they would likely have looked to describe it in terms which they felt I (as their former teacher) would appreciate or approve of, and there would have inevitably been limits to language as a resource for describing something temporal, ephemeral and embodied. Therefore, whilst conversations did emerge with the children during and surrounding their play, their verbal accounts are not seen as having more or less authority than the interpretation arising from multimodal analysis, but are taken into account as offering an additional perspective through a newly made sign.

Challenges and Limitations

As with all research, this study was inevitably partial and decisions were made at every stage entailing certain gains and losses. In line with my reflexive stance upon the process, I reflect here upon some limitations of the study.

Generalisability

Compared to some social research, the study was small in scale and duration, focusing on play in one nursery classroom over two weeks. My knowledge of the setting was extensive through my time working there, but I acknowledge that this research was nonetheless small-scale and localised. My decision to focus on short extracts of play episodes in fine-grained detail was apt for my particular research questions, yet as with all research, also entails certain limitations.

An enduring critique of interpretive, qualitative research is that it lacks generalisability beyond the situation in question and so has limited relevance or wider significance (Denzin & Lincoln, 2000; Hammersley, 2008). However, this emphasis on statistical generalisability in research has increasingly been challenged (Connelly & Clandinin, 1990; Denzin, 1983; Feagin et al., 1991; Yin, 2009). Through a small-scale, fine-grained multimodal approach I attempt to give close attention to the detail and complexity of play. I strive to use these detailed, moment-by-moment analyses to illustrate broader phenomena in an attempt to 'extract the general from the unique' (Burawoy, 2009). The focus of my research has therefore been to expand and generalise theories and theoretical propositions (Yin, 2009), not to generalise populations or universes. I am nonetheless aware that alternative approaches taking a broader or longitudinal focus would have offered different insights into play and recognise that this includes certain insights not facilitated by a small-scale, fine-grained approach. In the final chapter, I speculate on some future possibilities for researching play through different approaches.

The Partiality of Video

Rather than implying that video is an exact replica of reality or a complete distortion, I aim to consider video's partiality whilst acknowledging that it has a role in both capturing and shaping "the moment-by-moment and in situ construction of social reality" (Bezemer & Mavers 2011, p. 191). In my video recordings there were several instances where the children showed awareness of the video camera to varying degrees. This included episodes where the children took pleasure in performing for the camera (e.g. dancing, then asking to watch the recording) which I logged as episodes of camera play. There were also more fleeting, subtle moments such as glances and smiles towards the camera during their play. As I was using a handheld camera, it is difficult to make inferences about whether the children were looking towards the camera or me. Some of these moments are discussed in the analysis chapters which follow, with transcription proving a particularly useful tool for examining these moments closely. Rather than discounting the data as distorted or positioning myself and the camera as invisible, these moments are instead scrutinised to consider what children's attention to the researcher/camera at particular moments may be able to tell us about the organization of their play (see Heath et al., 2010; Jewitt, 2012; Lomax & Casey, 1998).

Although video provides a rich and detailed record, it remains unavoidably partial, and decisions made at the moment of recording inevitably shaped the record available for transcription and analysis. Many decisions about what and how to record were made in situ, responding to the unpredictability of young children and the free-flow, child-initiated approach in the nursery. In this way, certain decisions (such as which children to focus on, whether to film at close range of a distance, whether to track and pan across action) were made in response to action as it unfolded. This entailed a flexibility towards capturing play based on what sorts of activities were occurring, although it invariably shapes the data and highlights the partial nature of video as a research tool. Rather than choosing to adopt a fixed protocol for the use of the camera, or discounting the video records as invalid because of their selectivity, I have instead attempted to be explicit about the potentials and constraints of video in social research, using this as an opportunity for reflexive discussion.

As I re-watched the video data, I considered what the consequence would have been if I had made different in-the-moment recording decisions. However, the video can be seen as a lasting record of my interest at a particular moment of data collection. This is interesting in and of itself, with filming decisions influenced and informed by my own past as a teacher and as a researcher. I also considered whether, with hindsight, I might have used multiple cameras or recording devices to capture 'more' of the play. For instance, when re-watching the computer play episode discussed in Chapter Five, it could have been beneficial to have recorded the on-screen activity using screen capture software, and for the running play episode in Chapter Eight I wondered what a camera offering close-up recording would have added to my more distanced filming. As I had been attempting to film in the way a teacher might, so as to draw parallels with the classroom practice of observation and documentation, I used only a small handheld camera rather than multiple cameras or more specialist devices such as wireless microphones and screen-capture software, knowing these would not typically be available to practitioners. I was also aware of the fine ethical line between increasingly sophisticated data collection equipment and the danger of surveilling children and 'invading children's private worlds' (Clark, McQuail, & Moss, 2003). For this reason, I feel my use of the video camera was apt and sufficient for the study, whilst I acknowledge the limitations. As technological developments in the field continue apace, new technologies are emerging that present new potentials and challenges, as discussed in the final chapter of this thesis.

Selection, entailing both gains and losses, is seen as an inherent and inescapable dimension of all research which is brought to the fore with video-based research as it entices the viewer with a seemingly high 'reality status' (Jewitt, 2012). The richness of video can be deceptive, giving 'the illusion of an unmediated reality' yet, like all data, only ever offering a partial record of a bigger picture (Plowman & Stephen, 2008). Video will inevitably be limited by the hard edges and narrow angle of the camera lens, and as such is a "technology-mediated inscription" of an event (Duranti 2006, p. 306). Even with the use of multiple cameras or panoramic lenses, video

will only record a limited selection of the visible and audible material world. A related limitation of video is that despite its many affordances, it is unable to capture the sensory dimensions of the play experience such as smell and touch, nor the children's thought processes and inner meaning-making (Mackey, 2007). Whilst video appears rich and offers many potentials, I have attempted to critically reflect on and be open about its limitations.

Presentation of the Findings

An issue throughout the research has been the dual focus on both substantive and methodological issues. Whilst inextricably interlinked and connected by an overarching multimodal social semiotic perspective, it has been a challenge to coherently and simultaneously explore both insights into child-initiated play and to include considerable discussion of the methodological issue of multimodal transcription. What is favoured is an integration of methodological discussion throughout the thesis findings chapters. Each chapter focuses on one case study of children's play, and presents data through a descriptive vignette along with in-depth multimodal transcripts, and an accompanying reflective commentary which follows the trail of particular choices informing the transcript design and reflects on the potentials and constraints of each form. This is somewhat unusual, as discussion of transcription might typically be located only in the methodology chapter, but given the methodological focus of this research it was deemed most apt to integrate discussion of methodology into the discussion of play, to enable clear understanding of how play can be visualised differently through diverse transcription designs.

In the discussion and conclusion chapters, the key substantive insights and methodological insights are presented separately so as to most coherently address the study's two research questions. As such, these chapters begin with a discussion of the substantive issue of child-initiated play and then feature a discussion of key issues relating to multimodal transcription. Despite this logical separation for clarity and coherence, the two aspects of the study are fundamentally connected and this is assumed and alluded to throughout.

Chapter Five

"It is so lovely … don't throw that away": Computer Play Case Study

The first case study examines an instance of play at a desktop computer in the nursery classroom. The chapter begins with a brief introduction to computer play in the Early Years Foundation Stage, followed by the context and a descriptive vignette of the play episode selected for analysis. I chart the different forms of transcription I initially trialled, and discuss how the final 'timeline transcript design' enabled in depth multimodal analysis of the children's play on-screen and off-screen, and their communication of the message 'This is play'. I reflect upon how the particular design of the timeline transcript supported these analytical insights and conclude the chapter with a discussion drawing together findings relating to the children's organisation of play and the particular insights offered by multimodal transcription.

Computer Play and Learning

Information and Communications Technology (ICT) has become an integral part of early years provision as technologies become increasingly central to people's everyday lives, including the lives of young children. New developments in digital technologies continue to emerge at a rapid pace, reshaping the kinds of play opportunities available to young children in their homes and educational settings. Having revisited the case study site since carrying out fieldwork in 2012, the classroom's ICT provision has already changed, and now like many other early years settings includes provision of tangible technologies such as iPads in addition to the desktop computer and touch-screen Smartboard that were present during data collection.

ICT features in the 'Technology' aspect of the specific area of learning and development 'Understanding the World', outlined in the statutory framework for the EYFS (Department for Education, 2017). The 'Development Matters' guidance suggests that by the end of the Early Years Foundation Stage, children should understand "that a range of technology is used in places such as homes and schools" and should "select and use technology for particular purposes" (British Association for Early Childhood Education, 2012, p. 42). Practitioners are encouraged to provide a variety of ICT equipment, including games, and seek evidence demonstrating that children can "[complete] a simple programme on the computer" (British Association for Early Childhood Education, 2012, p. 42). A wide range of computer games have been developed by educational software companies which claim to support early learning. Siraj-Blatchford notes that many of these products follow a 'drill and practice' format devised to support the development of particular educational skills and concepts, such as counting and phonics (2015, p. 295). In such games, the player is typically rewarded with some sort of action sequence and/or sound if they give a correct response, with options gradually reduced if an incorrect response is made until the correct answer is chosen. Stephen and Plowman query

whether children's engagement with such 'games' can truly be considered play, since the design is seldom open-ended and they "offer limited scope for playful behaviour" (2014, p. 337) They suggest that whilst educational value is often used as a marketing device for digital games, further research is required to consider the kinds of play these new technologies offer and the ways they become incorporated into existing play.

The use of ICT in early years settings sits against a background of on-going debate and discussion surrounding the potential risks and benefits of children's engagement with technology. Play with digital technologies has often been positioned as a harmful opponent to 'traditional' play types such as physical outdoor games and social pretend play (Postman, 1994), with Palmer suggesting that play with technology is distinct from, and threatening to, 'real' play (2006). Such perspectives typically raise concerns regarding computer games as sedentary and isolated, with Merchant et al. suggesting the mass media has exaggerated this perspective and fuelled something of a 'moral panic' surrounding children's play with new technologies (2013). Those with more positive perspectives on new technologies suggest they offer helpful new tools for teaching and learning and will be vital in fostering skills essential for future employment (e.g. Papert, 1993; Yelland, Neal, & Dakich, 2008). Whilst polarised debates between panic and hype endure, there are increasing calls for research to move beyond measuring 'outcomes' of digital play, either positive or negative, towards a better understanding of *how* children engage with such technologies (Burke & Marsh, 2013; Kucirkova, 2014; Stephen & Plowman, 2014; Marsh, Plowman, Yamada-Rice, Bishop, & Scott, 2016). This case study takes an episode of play at a desktop computer and closely examines how the children interacted with each other and the technology in multiple modes.

An Instance of Computer Play in the Nursery

The computer in the nursery classroom was located on a child-height bench, adjacent to a laptop computer that was connected to a touch-screen Smartboard. In addition to smaller technologies such as a digital camera, these resources were available every day as part of the classroom's continuous provision and so could be accessed at any point during free-flow play. The desktop computer had a range of games and programmes pre-installed, mostly made by educational companies with specific learning aims in mind (e.g. *Millie's Maths House*, *The Seasons of Little Brown Bear*). Usually one of the classroom practitioners would set up a particular game or programme on the computer each day, but children who were particularly competent in using the computer tended to choose games from the selection of icons present on the desktop.

The computer was a very popular choice of activity amongst the children, and the classroom had introduced a sand timer system to help manage turn-taking. Children waiting for a turn would sit in one of the empty chairs at the computer table and turn over a five-minute sand timer

to measure the duration of a turn. The fieldwork was conducted in the summer term, and at this late stage in the school year the children were familiar with the turn-taking rule and would mostly use the timer independently and negotiate when it was time to swap. In addition to acting as a classroom management device, the presence of a timer indicates adult attitudes towards computer play in this setting. In my role as nursery teacher, concerns amongst staff would arise relating to the length of time children were spending at the computer, as some children would happily play for long periods. The headteacher had suggested to the nursery staff that children spending a lot of time at the computer or taking repeated turns should be moved on to other activities. This attitude did not seem present in relation to children's lengthy engagement in activities which might be considered more 'traditional', such as construction play, drawing or reading. As such, the timer represents more than merely a classroom management technique, but also a manifestation of a particular set of concerns about play with technology. For the adults, the timer was a means of controlling children's immersion in a form of play which was viewed with some apprehension, but for children it has been noted that a timer may act as a distracting or unnerving presence which limits them from becoming absorbed in their play (Flewitt, 2010).

In this particular episode of play, Toby is taking a turn on the computer, sitting directly in front of the monitor and controlling the mouse with his right hand. Matilda sits to his left, in the chair that typically acted as the 'waiting chair' beside the sand timer, and Ellie has moved a third chair to sit on Toby's right. The recording and analysis focuses on the interaction between Ellie and Toby, as Matilda is only partially visible in the recording, observing the on-screen action and looking towards the other children as she waits for her turn. Ellie and Toby were both four years old at the time of data collection and were friends who played together fairly regularly in the nursery. Matilda was the youngest girl in the class, three years old at the time of recording, and was a quiet member of the group who often showed preference for playing alone or engaging in adult-led activities.

In this episode, Toby is playing a recycling-themed game from the programme *Simple City* that depicts a rubbish heap and a selection of recycling containers, with the aim being to sort the waste items into the correct container (see Figure 5.1). As an item from the rubbish heap is clicked and dragged, the corresponding recycling container lights up (e.g. the compost heap for the banana skin), guiding the player towards the right solution. The game is strongly geared towards success, with the player rewarded by an animation and/or sound effect when the object is sorted into the correct container (e.g. worms wiggling in the compost heap and a munching sound). If the object is dragged into the wrong container, or the mouse button released too soon, the item returns to the rubbish heap at the bottom of the screen with no penalty and no sound effect. When all the objects have been sorted into the containers, the player can choose to replay the game or select another. The recycling game is therefore ostensibly a sorting task, based around classifying objects according to their material, with an implied environmental

message about the importance of recycling. The strong hints built into the game guide the play towards sorting into the correct containers, requiring mastery of the mouse skill of clicking and dragging and responding to on-screen visual prompts.

Figure 5.1: *Simple City* recycling game

Toby effortlessly completes the game, but there is a further dimension to the play between Ellie and Toby off-screen, related to the on-screen action, which will be considered in the analysis section which follows. In recording this episode of play, I positioned myself and the video camera to the side of the children with a view of their faces, permitting close attention to their gaze, gesture and facial expression alongside talk and manipulation of the technology. As I was endeavouring to record video in the way a teacher might collect observations in the classroom, I did not use screen capture software, meaning that the computer screen is not visible in the video recording. However, on-screen action can be inferred through the audible sound effects and the visible action of Toby's hand on the mouse. The entire clip is just over three minutes in duration, and the vignette that follows gives a descriptive summary of the whole play episode. A shorter section of the video recording, the first 26 seconds, has been selected for in-depth analysis, examining in close detail precisely how the children's play unfolded in multiple modes and was mediated by the technology of the computer.

Play at the Computer: Vignette

The recording begins with Toby sitting directly in front of the computer, using his right hand to control the mouse. Matilda is sat to his left (mainly out of shot), and Ellie to his right. Toby drops an on-screen item of rubbish into the correct container, resulting in a crashing sound effect, then

turns to look at Ellie, smiling and laughing. Referring to the on-screen items, which included objects such as cans and bottles, she says, “I need my wine bottle for my- I- it is so lovely”. As she is talking, Toby turns back to the computer and puts his hand back on the mouse, dragging another item into a container and causing another crash. He again turns to look at Ellie, smiling and laughing as Ellie repeats, “So lovely”. On both occasions, Ellie keeps her gaze fixed on the computer screen, with something of a serious or concerned facial expression.

Toby turns back to the computer and begins to move the mouse again. Ellie repeats, at a higher pitch, “So lovely”, which Toby responds to with laughter. Increasing the speed of her speech, she says, “I- I need it for my-“ as Toby drags another item into a container resulting in another crash. Toby turns to her and laughs again, as Ellie continues, “but- I need that for my sister (inaudible) BIRTHDAY!” raising her volume and shouting the final word. As she speaks, she moves her gaze rapidly from the screen to Toby, back to the screen, to Toby again, back to the screen and then to me. As she does this, Toby watches her and laughs. Smiling, Ellie then returns her gaze to the screen and Toby turns back to the computer, taking hold of the mouse once again. Back to her normal volume, she says, “Don’t throw that away”. This section is transcribed and discussed in detail in the analysis that follows.

The rest of this play episode continues to follow a similar pattern. As Toby drags more on-screen items into the recycling containers, Ellie creates further pretence about needing them, giving reasons why they must not be thrown away. She repeatedly uses the phrase, “I need that…” as Toby drags the objects into containers. For instance, as Toby drags food waste onto the compost heap she says, “I need that because it’s my banana I need for school”, and “No! Oh, I need that for my lunch at home”. Toby speaks infrequently during the episode but takes enjoyment in Ellie’s reactions, laughing and smiling at her objections. When Toby does speak he directs Ellie’s attention to his actions. For instance he says, “Look, your pear’s going away!” smiling as he throws the item in the bin while Ellie playfully makes a shocked face. When Ellie’s responses and objections are particularly exaggerated, Matilda can also occasionally be seen leaning into shot, looking towards Ellie and smiling.

At no point does Ellie physically try to control the computer (e.g. by reaching for the mouse), but she frequently verbally challenges what Toby is doing. For instance, she says, “Don’t throw that away” multiple times as he is dragging the objects into the bins. However, as well as disagreeing with Toby and acting shocked by his actions, she also offers him help and advice, for instance by suggesting that the tin can should go “in that squasher”, pointing to the on-screen metal-compactor. When it is then crushed, Ellie squeals and states that she needed the can “for her food”, as Toby laughs.

Toby occasionally glances at the sand timer to his left, as if to check how much of his turn remains. Also watching the timer is Matilda, who seems to be waiting for her turn. He completes

the game well before the sand timer runs out. While Toby sorts the last few objects, Ellie repeatedly asks, “Where does that go?” putting on a range of different voices and making her pitch and intonation high and song-like. When the final object is thrown away, Toby sits back in his chair and laughs, pointing at the screen and commenting, “All of your things are gone! Look Ellie, all of your things!” After a short pause, Ellie tilts her head down and covers her face with her hands, replying, “All of my things gone, I need that”. The recording ends as the headteacher enters the classroom to speak to me about the research, and the children’s attention shifts from the computer to us.

Analysis

The first 26 seconds of this episode were selected for detailed multimodal analysis, as representative of the longer stretch of interaction but short enough to study in detail (see Figure 5.2). What follows is an analysis of the children’s interaction using the transcript to examine the multiple modes involved in negotiating this instance of play, and how the interaction was shaped by the technology of the computer. The development of the timeline transcription format and insights offered by this particular design are considered, and the chapter concludes with a discussion considering the role of multimodal transcription in recognising the subtle complexities of digital play.

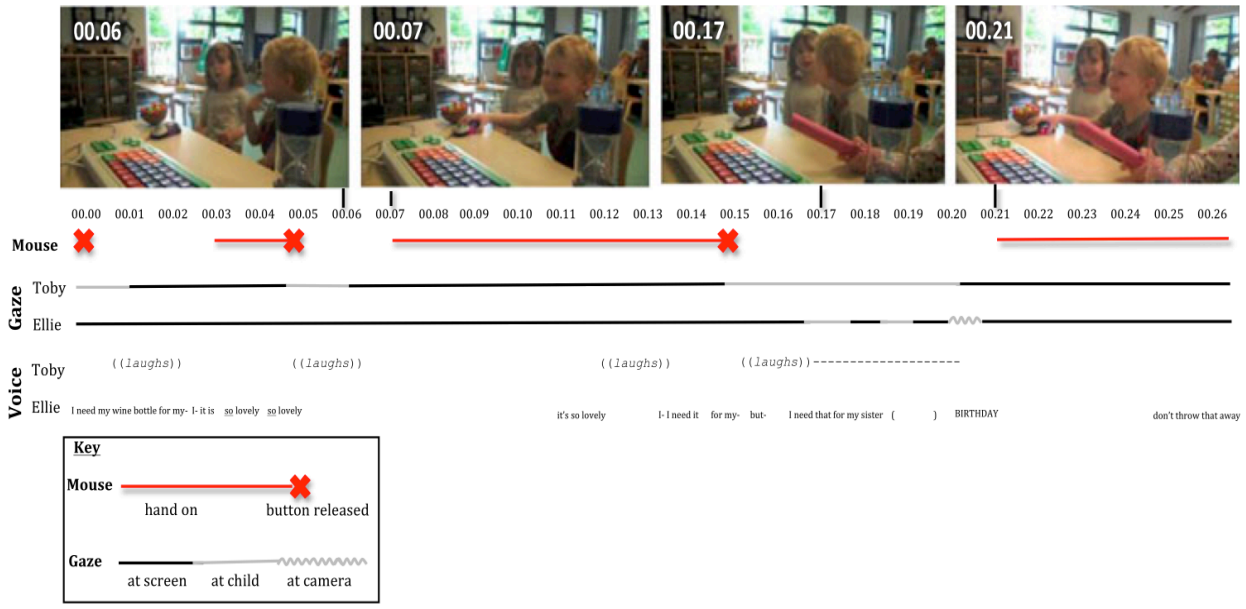


Figure 5.2: Computer play timeline transcript

Play On and Off-Screen

During this play episode, Toby easily completes the sorting activity that was central to the computer game, dragging and dropping all the items from the rubbish heap into their correct

containers before the timer runs out. However, the on-screen action is only one dimension of the play that occurred between Ellie and Toby. Close attention to not only Toby's mouse action (the clicking and releasing which enabled dragging and dropping of the on-screen items), but also the children's speech, laughter, gaze and facial expressions help examine the layers of the children's play as it unfolded off-screen in relation to the on-screen action.

Reflecting on the choices the children made in this instance of play with regards to use of space and resources, we notice that Ellie chose to sit in a chair placed to Toby's right. Ellie's decision to sit rather than stand demonstrates more than a passing interest in what Toby is doing and suggests she has positioned herself so as to have a good view of the screen. Unlike the chair to the left in front of the timer, occupied by Matilda, Ellie was not in the usual 'waiting' position. Instead, Ellie's position shows her adopting something of an observer or audience stance. More than just observing however, Ellie becomes active in responding to Toby's on-screen actions and in constructing the game-like interaction that unfolds between them without directly manipulating the computer.

The technology of the desktop computer can be considered to shape the interaction in several ways. All three children are in chairs that orient their bodies and gaze towards a joint focus on the computer screen. Despite gaze and posture being directed towards a joint focus on the screen, this arrangement enables the children to be aware of each other's movements in their peripheral vision. Toby turns to look at Ellie after each release of the mouse (at 0-1, 5-6 and 15-20 seconds on the timeline transcript), an action requiring some effort since his posture and positioning of the chair align him more towards the computer screen. Since this is something of a shift from a 'default' focus on the screen, it appears particularly emphatic to the interaction. He seems to turn and look towards Ellie to watch and enjoy her reactions, but she does not return his gaze on these first two occasions (at 0-1 and 5-6 seconds) keeping her focus and positioning towards the screen. The moment when she does eventually turn, and Ellie and Toby exchange gazes (from 17-19 seconds), gaze then takes on particular importance to the interaction as a key moment when a different interpersonal exchange is established. These shifts in gaze and positioning are explored further in the following section.

The majority of the play unfolds with the children focusing on the screen, not looking directly at each other, but with each other in their peripheral vision, listening to each other and the game's sound effects as they jointly watch the on-screen action controlled by Toby. The children's orientation means they are not in a normal face-to-face position for interaction, and whilst they focus on the screen, audible modes such as sound effects, laughter, speech and its qualities seem to carry particular significance and be used for particular emphasis. The pitch and volume of Ellie's talk is especially varied. She repeatedly stresses the word "so" (at 3, 4 and 11 seconds) and raises her volume, building to shout the word "BIRTHDAY" (at 2 seconds). Several clauses are fragmented and left unfinished, such as "I- I need it for my- but-" (13 to 16 seconds) which seem to suggest desperation or exasperation, or that the on-screen action has

made it unnecessary to finish the utterance. Her lexical choices, such as the repeated opening, “I need…” (at 1, 13 and 16 seconds) and stating many times that her bottle is “so lovely” (at 3, 4 and 11 seconds) further serve to reinforce her objections and exaggerate her reactions as she gives intensity to her speech.

Toby responds to Ellie’s exaggerated disagreement with laughter, which she seems to return with further exaggeration of her responses, with Toby laughing more, developing a repeating and escalating pattern of mutual enjoyment to the exchange. This is visible in the transcript, which highlights a repeating pattern of Toby releasing the mouse, followed by his turning to look at Ellie, and his laughter. This occurs three times throughout the short transcribed section, visible in a repeated diagonal sequence on the timeline (at 0-2, 3-6 and 15-20 seconds). Toby turns to look at Ellie after each object is dropped into its container as if to watch and enjoy her reactions to his on-screen actions. In this sense, although Ellie has positioned herself as an audience for Toby’s computer play, Toby and Matilda also become an audience for Ellie’s play performance.

Toby’s repeated actions and Ellie’s growing exaggeration establishes a playful game between the pair, with Toby seemingly trying to further provoke Ellie’s performance of shock and upset. Toby does not speak in this particular section of the play, but his laughter, the shifts in his gaze, his use of the mouse and change of posture multimodally contribute to a reciprocal exchange with Ellie. Whilst Ellie’s speech suggests disagreement and upset, she is clearly ‘in on the game’ and crucial in constructing the pretence, with her emphasis increasing with Toby’s evident enjoyment.

In this play episode, the on-screen game becomes part of a broader off-screen pretend play scenario, where the computer and game activity selected can be considered an additional participant in the exchange. The features of the on-screen game become fertile ground for the generation of new play off-screen. Ellie treats the items in the digital rubbish heap like props, inventing imaginary scenarios surrounding the rubbish embellished with details such as needing the bottle for a fictional sister’s birthday, establishing a sense of narrative in the play. The crashing sound effects the items make as they are thrown away become part of the unfolding storyline, where Ellie repeatedly, and increasingly dramatically, challenges what Toby is doing. She playfully attributes value to these depictions of rubbish, playing with what they represent in the game and to her in a fictional scenario. The fact that the items in the game are ‘virtual’ depictions of ‘real-world’ objects sets up a further kind of irony between the somewhat flippant on-screen action of throwing away rubbish and an exaggerated off-screen emotional reaction, creating a game which hinges upon the interplay between signs and actions on and off-screen, together forming a multi-layered multimodal episode of mutually enjoyable playfulness.

'This is Play': A Multimodal Message

The children do not explicitly discuss the pretence they create during this episode, but they jointly and successfully communicate the message 'This is play' between them. Looking at a transcript of Ellie's speech alone, we might assume her words demonstrated genuine confrontation, upset or anger directed at Toby. However, a multimodal transcript offers a means of understanding how this play is negotiated in multiple modes.

The particular design of the transcript presented in this case study enables identification of points where there is intensity or concentrated action within and between modes. In the transcribed extract (see Figure 5.2), such a point occurs between 16-21 seconds. Toby has released an object into the container, causing a crashing sound effect, and then turns to look at Ellie. Unlike the previous times this action was performed in the same extract, Ellie turns to meet Toby's gaze, shifting between looking at him and the computer, and then towards me holding the camera. This coincides with a rise in the volume of Ellie's speech and her emphatic shouting of the word "BIRTHDAY" (at 20 seconds). Both children lean closer towards the computer screen, angling their bodies towards one another (at 17 seconds). As we can see from the still taken at 21 seconds, Ellie then smiles, whereas she had previously maintained a serious or concerned expression, albeit playfully.

As Ellie's talk builds to its most exaggerated and emphatic, and as Toby's laughter is at its most prolonged, their gaze exchange seems to be used as a communicational 'check' between the children to confirm that the off-screen game is one of pretence and performance that they both authorise. The rapid succession of changes in gaze direction (17-20 seconds) is followed by both children smiling (at 21 seconds), as if to reflect mutual enjoyment and a reciprocal understanding that all involved understand and approve the play that has developed. The rapid switching of gaze includes a moment when Ellie looks to me holding the camera (at 20 seconds). If we see the meeting of gazes as significant in negotiating and 'checking' the playfulness of the exchange, we might interpret that she is also checking whether her challenging of Toby, her exaggeration and performance, is one that is permitted and approved by me, an adult who she viewed as a teacher. In this way, her glance to me can be seen as a further check that I too am 'in on the joke'.

Detailed analysis of this section of the recording seems to suggest that the message 'This is play' is orchestrated in complex multimodal interaction, involving the children's use of facial expressions, gaze and body positioning. In Toby's case, these multiple modes are used in the absence of speech. In this extract, although Toby does not speak and Ellie's speech is seemingly confrontational, a play frame is successfully established. Exaggerated volume, meeting of gazes, smiling and repeating actions comprise subtly orchestrated multimodal signs that what is being said should not be taken at face value, but signifies play.

The children can be considered to be creating a complex multimodal and enacted text, incorporating the images and sound effects of the computer game into an off-screen pretence relating to imagined scenarios and performed reactions. Part of the children's interest and enjoyment seems to concern an ironic and subtle distinction between real and pretend emotions. In many ways the interplay between the on-screen game and the feigned upset is a fine line for the children to tread, involving exaggerating and manipulating their own and each other's emotions. Ellie plays with chastising Toby, and Toby plays with disobeying instructions. Ellie plays with pretending to be upset, and Toby pretends to make deliberate choices that will upset her, laughing at her apparent distress. Without the clear understanding that 'This is play', such a game has the potential to hurt real emotions and damage real friendships, highlighting the subtlety and sensitivity of the children to the interaction in modes beyond language. Multimodal analysis of the play text that is created is helpful in identifying the interest the children seem to have in playing with emotions, both their own and each other's, and their risky but sensitive exploration of the border areas between 'reality' and pretence.

Transcript Design: Timeline

In transcribing the video recording of children's play at the computer, I tried out a number of conventions typically used in the transcription of social interaction. Representing the same short extract in a number of formats drew attention to the ways in which the transcript design inevitably highlights certain aspects and obscures others. I have used this reflexive comparison of transcripts to discuss in detail the affordance of different transcription design (Cowan, 2014a) and to develop the eventual 'timeline' design featured in this case study. Here I briefly outline some of the gains and losses of three typical transcription conventions applied to this extract and describe how this informed the multimodal timeline design and the analytical insights this supported.

I first created what might be called an orthographic or playscript style transcript (Erickson, 2011), attempting to turn spoken language into writing 'verbatim' or 'word-for-word' (see Figure 5.3). Such an approach is common particularly for studies interested in the content of participants' speech (e.g. interviews, focus groups) but clearly has many limitations, particularly for multimodal researchers interested in communication beyond language. What it does offer is clarification of Ellie's speech, including identifying particular subjects she raises ("wine bottle", "birthday", "sister"), a repeated positive response ("so lovely") and an instruction ("don't throw that away"). Although there is a fairly clear representation of what Ellie said, we do not know how she said it, who she addressed, or other contextual details of the interaction. In its sole focus on speech, it also renders Toby invisible in the interaction. As such, although this transcript largely makes grammatical sense to the reader, much of what is key to the interaction is clearly omitted.

```
Ellie:    I need my wine bottle for my… I… it is so
          lovely. So lovely. It's so lovely. I need it
          for my… but… I need that for my sister (  )
          birthday. Don't throw that away.
```

Figure 5.3: Computer play orthographic transcript

In an attempt to represent not just *what* was said but also *how* it was said, I then transcribed the same extract using conventions from Conversation Analysis (CA). CA makes use of grammatical signs, symbols and typography to systematically account for speech and features of speech, and has developed a highly specialised transcription notation system widely used within the field (Jefferson, 2004; ten Have, 2007). When some typical CA conventions are applied to the video extract, qualities of Ellie's talk, including halts, emphasis, pitch and volume become apparent, as does her speed of delivery and pauses (see Figure 5.4). One major difference between the two transcripts is that through attending to all vocal sounds, rather than just spoken words, this transcript signals the presence of Toby in the interaction. Reading information off the transcript requires some familiarity with CA conventions, which can limit its reach and may pose interpretive challenges to those not familiar with its system. Although it represents the speech and speech qualities, it remains a partial transcript of the interaction particularly in respect of the wider context and detail of the children's focus and use of the computer.

```
Ellie:        I need my [wine bottle for my-
Toby:                   ]hhh
Ellie:        (0.5) I- it is so lovely. (1.4)
              so lovely?
Toby:         huhuhuh •hhh
Ellie:        (5.0) ↑>its so lovely<
Toby:         eeyheehuhuh
Ellie:        I-I need it for my- but-
Toby:         huhuh[uhuhuh •hhh huhuhuhuhuh
Ellie:             ]I need that for my sister (        )
              BIRTHDAY
Toby:         •hhh hh
Ellie:        (4.0)don throw tha away
```

Figure 5.4: Computer play Conversation Analysis transcript

As a means of incorporating the children's engagement with the computer, I tried using a grid format to attend to children's communication in multiple modes, including their orientation to the computer and Toby's use of the mouse (see Figure 5.5). A grid design is useful in examining the specificity of modes whilst maintaining an overview of how they simultaneously work together (see also Chapter Six). When transcribing multiple modes in this way, a short section of video

quickly becomes a dense tabular transcript. The information contained in this transcript certainly provides the reader with more detailed information about the multimodal nature of the encounter, but whilst the transcript attends to these multiple modes, it represents each mode in writing, transducting visual and embodied modes into linguistic forms.

Experimentation with these conventions shaped the development of the 'timeline' layout which I presented earlier in this chapter (Figure 5.2), building upon similar formats used by other researchers interested in multiple modes in face-to-face social interaction (Heath et al., 2010; Bezemer, Murtagh, Cope, Kress, & Kneebone, 2011). In contrast to the tabular format, this design represents time as a continuous horizontal line, from left to right, with lines beneath to represent different aspects of the interaction. As with the table format, the reader can choose to examine occurrences happening simultaneously by reading vertically across modes, or separately along the horizontal 'channels', enabling the reader to see precisely what was occurring within and between modes over a period of time.

Ellie Vocalisation	Toby Vocalisation	Computer Sound FX	Mouse Use (Toby)	Toby Gaze	Ellie Gaze
I need my wine bottle for my- I- it is so lovely so lovely	(laughs)	crash	release hand on	at Ellie at screen	at screen
	(laughs)	crash	release hand on	at Ellie at screen	
it's so lovely	(laughs)				
I- I need it for my- but- I need that for my sister ( ) BIRTHDAY	(laughs)	crash	release hand on	at Ellie at screen	at Toby at screen at Toby at me at screen
don't throw that away					

Figure 5.5: Computer play grid transcript

The timeline transcript was originally created using *ELAN* but remade in Microsoft Word, a time-consuming process but one which enabled greater flexibility and control of the transcript's design than the limited output options supported by *ELAN*. A main feature of the 'timeline' transcript is that visual modes, including image, layout and colour, are central to the transcript design. Symbols and lines of different types and colours are used to convey information about what is occurring and when, represented visually rather than through written description. For instance, a black line denotes a gaze towards the screen, a grey line towards the other child, and a zigzagged line towards the camera, enabling the reader to easily note points when the

children's focus was the same, different, or when they exchanged gazes. Whilst these devices mean less need for writing in the transcript, the conventions need explaining by way of a key to enable the reader to make sense of the material.

Image also features in this timeline transcript through the inclusion of video stills, with the effect of immediately making available information about the interaction which would take many words to describe, for instance the exact distance between the children and subtleties of facial expressions and gestures. It is not usually possible (or necessarily useful to the reader) to include every frame as a video still in the transcript, particularly if there is a long sequence of video to transcribe. In the timeline transcript, video stills are taken immediately after Toby releases the mouse button and when he places his hand back on the mouse. The stills therefore show the motion of his arm and hand in this clicking procedure, his body turn towards Ellie, her turn towards him and their facial expressions at these points, which are features not included elsewhere in the transcript and not made possible by linguistic transcription.

This timeline transcript design therefore represents much of its content through visual and spatial modes, such as line and layout, alongside video stills, rather than through written description. One insight this might offer above other forms of transcript, through its similarity to a musical score, is an increased ability to identify patterns and rhythm in the interaction. In the timeline, for instance, there is a visible diagonal pattern of Toby releasing the mouse, turning to look at Ellie and laughing, which draws attention to the repetitive element to the children's play (at 0-2 , 3-6 and 15-20 seconds). The timeline transcript also highlights moments of intense and concentrated action, for instance Ellie's numerous gaze shifts and her louder volume, which draw attention to her building exaggeration in response to Toby's repeated actions (15-21 seconds). These 'noticings' support insights into precisely how combinations of modes are orchestrated by Ellie and Toby to construct the simultaneous playing of the onscreen game whilst sustaining their offscreen play, communicating to each other that their interaction hinges around a teasing game of pretence.

The multimodal timeline transcript incorporates and adapts some of the conventions of the playscript, CA and tabular formats. The transcription of speech, for instance, mainly follows orthographic conventions, but retains some features of CA to represent emphasis and volume. Like the tabular format, the timeline represents modes separately and within an overall ensemble whilst incorporating further visual elements such as video stills. A particular affordance of the timeline design is in depicting time as unbroken, and of reducing the need for written description by making use of lines of different colours and quality. The result seems to bring clarity to highly complex interactions, layering information about the interaction, highlighting patterns and rhythm to the exchange with each other and the technology, supporting close consideration of how an instance of play at a computer unfolds over time in multiple modes.

Discussion

A focus on speech in this interaction would tell us nothing about Toby's role in the exchange and might suggest Ellie was genuinely angry or upset. If a coding system of spoken content was being used for analysis, the transcribed speech from this extract might easily be classified as negative comment, implying that the episode was one of conflict or limited reciprocity between the two children, as in Stanton and Neale's study of children's collaboration at computer tasks (2003). In fact, the interaction is highly reciprocal, with Ellie's speech used for performance as part of a pretend play scenario, or even playful irony, which is understood, authorised and enjoyed by both Toby and Ellie. The talk and its qualities give us some information about the playfulness of the exchange, but multimodal analysis sheds further light on the ways in which this is negotiated in modes beyond the linguistic, such as through shifts in gaze, changes in body positioning, repeated actions and facial expressions. This supports Wild's (2011) observation that young children's 'non-verbal signifiers' at computers are worthy of serious attention. Whilst making this important point, Wild's own study glosses 'non-verbal' features into written descriptions in a playscript-style transcript. Developing multimodal methodologies which attend to multiple modes offers a step towards more nuanced means of examining and understanding children's meaning-making in many forms, including in play with new technologies.

At first sight, an interpretation of the video data in relation to learning might be to identify that Toby could independently complete a sorting game on the computer, overlooking Ellie because she was not directly using the technology, or foregrounding her because of her talk. Closer attention reveals how this play involved much more than simply completing the on-screen game. Detailed multimodal analysis shows how both children interacted with each other and the technology, simultaneously and skilfully playing the on-screen game and negotiating off-screen play through modes such as gaze, facial expression, laughter and body position as well as, in Ellie's case, talk. In their study of three- and four-year olds using computers in nursery, Brooker and Siraj-Blatchford observed that the computer provided a powerful medium for 'a new form of symbolic play', where socio-dramatic play incorporated manipulation of symbols and images on-screen, transitioning into play in the off-screen world (Brooker & Siraj-Blatchford, 2002). Marsh similarly identifies the tendency of narrative themes to continue in children's play off-screen (2005), with Bailey suggesting that children collaborate and demonstrate creativity both in and out of virtual worlds, often in complex interconnected ways (2016). Such findings challenge assumptions that play with technology is passive, isolated and takes children away from 'real-life' interaction with others (Palmer, 2006). Rather, the short extract of Ellie and Toby's interaction with each other and the computer highlights that children's digital play with technologies remains connected to and embedded within the 'real world', whilst giving rise to new hybrid forms of play.

In their research into children's virtual online play worlds, Merchant et al. (2013) examine and challenge the distinction between the 'real' and the 'virtual', and it seems in the extract the children were exploring this concept for themselves in several ways. On one level, Toby and Ellie's play hinges upon on-screen actions and off-screen reactions, creating a subtle joke about the disproportionately exaggerated responses to throwing away 'virtual' representations of rubbish. It seems the children are also interested in exploring the 'real' and the 'virtual' in their communication with one another, in playing with the boundaries and distinctions between sincerity and pretence in interaction. Clearly more than a sorting game, the play seems to reveal the children's interest in exploring the fine line and delicate balance of each other's feelings and emotions. In this sense, such an episode might be considered a form of 'risky play'. Whilst this is a term more usually reserved for physically challenging rough-and-tumble play, it seems apt to consider ways that risks may also be social, with multimodal analysis suggesting that the risky border area between real and virtual, genuine and pretend, was of serious interest to the children in this episode of play. As the data was collected at the end of the school year, the children were very familiar with one another and had developed strong friendships. For such play to be successful and enjoyable without hurting one another's feelings, it seems that a social relationship and trust may have been a necessary condition which supported this complex multimodal exchange and the ability to 'read' one another.

The children in this extract follow the design of the on-screen game to a point, with Toby successfully completing the sorting activity, but the game also provides the basis for the generation of off-screen play incorporating new ideas and interests, creating an entirely different play text to that presumably imagined by the computer game's designers. This somewhat complicates Stephen and Plowman's (2014) suggestion that educational computer games, in their typically goal-oriented, closed design, leave little scope for the intrinsically motivated open-ended exploration which is often considered to define play. A multimodal social semiotic analysis recognises the agency of the sign-maker in all instances, including an interaction with a pre-designed 'drill and practice' type computer game such as the one in this extract. Ellie and Toby, for example, respond to the computer game in original, inventive ways, using it to create a new play text motivated by their own particular interests, experiences and social relationship. The affordances of the computer game, such as its images and sound effects, certainly provide something of a prompt or fertile territory, but the children's own creativity and agency as sign-makers mean they are actively making meaning anew, and in so doing are designing their own play text. In this sense, multimodal analysis supports the suggestion that computer play can be active and innovative (Marsh, 2005; Bailey, 2016; Marsh et al., 2016). Such a perspective argues that even when playing games which are in their design somewhat closed, goal-driven and procedural such as the 'educational' game here, children can still demonstrate agency and creativity in producing new unexpected play texts. A multimodal social semiotic stance therefore offers a means of considering the affordances of new digital computer game texts, but also acknowledges and recognises that children will respond to these products with agency as active

meaning-makers. The implication for educators is to challenge prevalent attitudes towards play with new technologies, such as those embodied by the classroom sand timer. Rather than seeing computer play as passive and isolated, where immersion is to be discouraged and prolonged engagement is a concern, practitioner attention could instead focus on recognising the types of communication and interaction that these new technologies support, valuing them as a new form of play through which children make and express meanings.

As a relatively new form of play, and with new games and interfaces being developed all the time, understanding of digital play is still an emerging field. Although just one short extract, the case study reveals the potential of multimodal analysis for considering, in depth and in detail, how an instance of computer play unfolds. Such a perspective accounts for consideration of the role played by technology itself in interaction, the integration of on-screen and off-screen play, the affordances of the technology and the agency of the players, all within a particular situated context where play is social and collaborative. Rather than striving to measure outcomes or evaluate the educational potentials of technologies, a multimodal analysis unravels some of the subtle complexities of digital play, opening up a discussion about the affordances of these new games, how children's play is evolving and taking on new forms and how we might begin to recognise and value it.

Chapter Six

“Everybody seatbelts on!”: Pretend Play Case Study

The second case study examines an instance of pretend play amongst a group of children in the nursery garden. The chapter begins with a brief introduction to how pretend play is represented in the Early Years Foundation Stage, followed by the context of the particular play episode featured in this chapter and a descriptive vignette of the unfolding play. Transcripts are then offered to support a detailed multimodal analysis that attends to the ways the children shape and organise their play. This forms the basis for discussion of three key themes that emerged from the process of transcription and analysis: children as designers of play spaces, social relationships in pretend play and pretend play as improvisation. A discussion section draws together the findings of the case study, and the chapter concludes with reflections upon the particular grid-style transcription format used for this episode, including how the design was used to support multimodal analysis and the insights this approach offers into social sign-making in play.

Pretend Play and Learning

This case study focuses on a group of children collaboratively acting out imaginary scenarios in the outdoor area of the nursery school. In the EYFS Framework, ‘role-play’ is mentioned explicitly within the ‘Expressive Arts and Design’ area of learning and development within the aspect ‘Being Imaginative’. It is presented, alongside forms such as art, music and dance, as a means through which children “represent their own ideas, thoughts and feelings” (Department for Education, 2017, p. 12).

Play of this kind is referred to by a range of terms carrying slightly differing emphases. Smilansky’s work on ‘socio-dramatic play’, for instance, highlights the cooperative social dimension between role-players (1968). A further distinction is sometimes drawn between play that interprets and enacts everyday scenarios within the child’s frame of experience (e.g. home and family themes) and fantasy or imaginary play (e.g. pirates and monsters) (Suzanne Gaskins, 2014; Hughes, 2006). Since both forms feature in this case study episode and both use multiple modes to represent imagined people and places, I use the general term ‘pretend play’ throughout the chapter, noted by Garrick et al. as the term most often used by children themselves in describing this kind of play (2010). Whilst there are elements of pretence in all four case studies (for instance, the computer play in the previous chapter), the play in this case study centrally features a group of children enacting a pretend scenario, exemplifying Harris’ definition of pretend play as “play between children in which they temporarily act out the part of someone else using pretend actions and utterances” (2000, p. 30)

Pretence in play has been given particular attention in relation to knowledge construction through imitation and practice (Piaget, 1945) and in terms of children's use of symbols (Vygotsky, 1967). As discussed in Chapter One, the suggestion is that pretend play's importance lies specifically in the separation of meaning from actions, where one thing represents another. Building upon Vygotsky's work, research from a socio-cultural perspective has further suggested that as an early symbolising activity, pretend play forms an important aspect of early literacy (DeZutter, 2007; Kendrick, 2005; Paley, 2004; Rowe, 1998). Rogers and Evans highlight the centrality of communication in pretend play, both verbally and non-verbally and within and outside of a play frame (Rogers & Evans, 2008). They suggest that pretend play crucially involves the ability to see and appreciate the viewpoints of others, proposing that pretend play provides an important context for developing social competence and social skills (see also Rubin, 1980; Sutton-Smith, 1971).

With 'role-play' highlighted in the EYFS area of 'Creative Development' (Department for Education, 2017), it is perhaps unsurprising that space for role-play is often reflected in the layout and organisation of many early years settings. Studies describe the common presence of 'role-play corners' usually set up by the practitioner relating to a particular topic or theme (e.g. home corner, doctor's surgery, police station) as part of a classroom's provision (Garrick et al., 2010; Rogers & Evans, 2008). Somewhat unusually, the fieldwork site for these case studies did not have a themed role-play area as such, but instead made available baskets of props and flexible spaces which could be used for pretend play. For instance, during the period of data collection a selection of cups, bowls and plates were placed in a basket near the book corner area of the classroom, and a basket of scarves had been placed in a basket on the main carpet area. This case study outlines an example of an instance where a flexible space became the setting for shared pretend play.

An Instance of Pretend Play in the Nursery

This case study focuses on the play of a group of children in the outdoor area of the nursery. The outdoor area adjoined the nursery school classrooms and could be accessed as part of 'free flow' provision for the majority of the nursery session, meaning the children could choose to play either inside or outside. The outdoor area was equipped with a range of resources and activities, for instance plastic hoops, mark-making tools and building blocks, in addition to fixed play equipment such as a slide, climbing frame and large sandpit. The outdoor area also incorporated elements of a garden, including trees, bushes and flowerbeds set back from the main play areas.

The play episode in this case study took place at the back of one such garden area, in a small, enclosed space amongst trees and shrubs that could be accessed by squeezing between some

bushes and the fence at the perimeter of the play area. The area was mostly out of sight from the rest of the playground and too small for adults to enter easily. This den-like enclosure proved popular with the children and somewhat problematic for the staff. In my time teaching there, practitioners discussed the difficulty of being able to 'keep an eye' on the children playing in this space. Yet observations of the children frequently at play here seemed to suggest its secretive location and child-sized dimensions might have offered something particularly appealing.

Noticing two boys playing in this space during my time collecting data, I crouched at an opening at one end of the bushes and video-recorded part of their play. Choosing to observe a place which was usually restricted from view presented an interesting insight but also a dilemma. I considered whether I might be intruding on play which the children had specifically wanted to keep private, away from adults. The fact that the camera and I were visible to the children and that they continued their play in this space without much regard for me reassured me that they did not seem to mind my presence. At points, the children smiled towards me, or seemed to be addressing me directly to make me aware of parts of the play and potential problems (e.g. during their aeroplane play, Ben directly warns me about "the baddies").

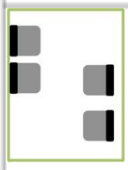
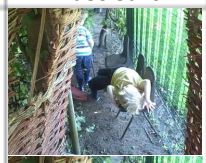
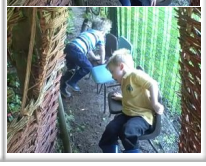
The size and location of the space meant I was limited in where I could position myself to be able to observe but not be in the children's way. It restricted my ability to move with the camera and created a recording mostly made from a fixed position. As such, it is not always possible to see the children's facial expressions and gestures when they turn away from the camera or obscure each other, or to get a sense of where they go when they leave the bushes during the play. What it does offer is a focus on the small enclosed space, revealing how the area was used and re-configured throughout a stretch of pretend play.

The area in the bushes was not usually equipped by the practitioners in the same way that the sandpit, tables and grass were set up with particular resources or activities on offer. Yet at the end of the day, it was common to find that the children had taken various objects into this space themselves. In the episode selected for this case study, the children had transported a number of small chairs into the bushes from the tables outside the nursery classrooms. As will be seen from the analysis that follows, the children constructed and enacted play scenarios which incorporated the arrangement of chairs in the play space, the features of the natural environment around them, their gestures and movements as well as their talk.

This case study draws upon two separate recordings made in the bushes in the same afternoon. The first clip (2 minutes and 49 seconds long) features the play of friends Jake and Ben, two of the youngest boys in the study who were both three years and eleven months at the time of data collection. A four-year-old girl, Maddie, can also be heard addressing them in this clip although she is out of camera shot. In this episode, the two boys repeatedly move four

chairs, negotiating several different arrangements as they act out domestic and real-life themes such as sleeping and going to the doctors (see Figure 6.1).

Figure 6.1: Pretend play transcript A

	Chairs	Video Stills	Jake	Ben	Maddie
1			*Picking up chair and moving toward fence*	*Lying on two chairs, on his back*	
2			"Maybe we c- maybe we can- d-" *Moving fourth chair to fence* "I'm gonna be in the same room as you, I am. Can you move that?"	*Rolls off chair into crouching position, then sits on the ground looking up at Jake.*	
3			*Lets fourth chair tip over as he points to chair Jake is tapping*	"You gonna sleep with me?" *Tapping chair with hand, looking up at Jake*	
4			"Bu- but- yes but can YOU go in that corner?" *Points to corner of fence*	"You gonna sleep with me?" *Sits on two chairs pushed together. Gaze shifts between Jake's chairs and the corner Jake is pointing to*	
5			*Picks up fallen chair and repositions against fence*	"Ok" *Moves chairs further along towards corner*	
6			*Adjusting his two chairs so they are closer together*	"NOW we have room to sleep good" *Sitting down on corner chair*	"I hope no boys is in my shed" *(off camera)*
7			"Yes and now I can lie on here" *Lying face down on his two chairs*	*Puts legs up on chairs towards Jake*	
8			*Stands up* "Or maybe- can you put your feet that way? *Pointing away from him*	*Watching Jake*	
9			*Sits on chair, watching Maddie*	*Turns to look at Maddie, then at camera*	"Heyyy, I THINK some boys are in my shed. Aaaand I'm not impressed"
10			*Lies down on chairs, feet towards Ben, then gets up* "Morning time"	*Turns to Jake, makes brief lying-down motion then sits up*	

		Jake	Ben
11		*Lifts up chair and moves it away from fence*	*Standing up, walking away from fence* "Will you take me to the doctor?
12		"But- can I-" *Moving chair away from fence*	*Looking at Ben*
13		*Places chair down*	"Can you take me to the doctor's please?" *Walking towards exit*
14		"No no no no this IS the doctor's", *shouting after Ben as he leaves the bushes*	*Walks out of bushes*
15		*Gradually moves all chairs opposite fence* "That can go there"	
16		*Pushes chairs closely together.* "My bed" *Lies face down on all four chairs.* *Remains still for 10 seconds*	
17		*Gets up and looks around space* "Baby?" *Walking towards exit*	*Rushing into bushes.* "THERE- there's there's some girl was gonna hit me so I had to come in he-"
18		*Lies down on chairs*	*Looks around* "Hey. Why that there and not there? 'Cos I need these ones and you need these ones" *Gestures to pairs of chairs*
19		*Stands up, begins to lift chairs*	"These ones are mine and those ones are yours" *Lifts two chairs*
20		"Can I be here?" *Positioning chairs in corner* "Can you look after my chairs? *Gestures at chairs with hand* *Begins to walk out of bushes*	*Watching Jake* "No I'm based there" *Positions chairs by fence.*

In the second recording (1 minute and 59 seconds long), which took place later in the same afternoon, Jake and Ben are joined by three other boys from their class. Lucas, Max and Ben's twin brother Edward were friends in nursery who also all attended wrap-around additional care

together at the Early Years Centre. In this episode, the chairs have been repositioned behind one another into a line, and the play relates to fantasy and adventure-based themes such travelling in an aeroplane, finding treasure and dealing with emergencies (see Figure 6.2). In the busy shared outdoor space, it is possible to hear other children playing nearby, but I made the decision to focus on recording and representing the play of the boys in the bushes except when other children came into the space or addressed them directly.

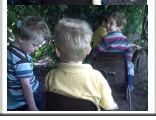
	Chairs	Video Stills	Jake	Ben	Max	Lucas
1			*Shouting towards the others,* "It's starting to go! Everybody seatbelts on."	*Looking at Jake, moves towards chair*	*Re-enters the bushes, moving towards chairs*	*Looking at Jake, climbs onto chair*
2			*Stretches right arm behind Ben*	*Pauses, looks at empty seats, and sits on chair beside Jake*	"Oh ugh agh ugh". *Sits on chair*	*Twists around and sits on chair*
3			*Watching Ben's actions.*	"Kch" *Jabbing motion with right arm to right side*	*Grabs branch firmly with right hand* "Oooo…"	*Watching Max grab branch*
4			*Watching Ben* "You put this…"	"Kch" *Jabbing motion with right arm to left side*	"…oooooh" *Lets go of branch*	*Taps branch with left hand*
5			"N-no. Shall I put your seatbelt?" *Stands up and leans across Ben*	*Watching Jake*	*Watching Lucas*	*Taps branch again with left hand*
6			*Reaches across Ben, brings arm back and puts both hands together in connecting action*	*Watching Jake*	*Watching Lucas*	*Holds branch and shakes it back and forth* "Nuh nuh nuh nuh nuh nuh nuh nuh nuh nuh"
7			*Reaches across himself, and brings hands together*	*Watching Jake*	*Turning to look over shoulder, towards Ben and Jake*	*Continuing to shake branch*

Figure 6.2: Pretend play transcript B

In creating these transcripts I have used a grid style design to provide a means of re-presenting and analysing multiple children's simultaneous involvement in the play. As the arrangement of the space emerged as central to this play, the first column diagrammatically represents the chairs the children were moving from a top-down perspective, and the second column depicts video stills showing the children's positioning. The participant columns report the children's speech and attempt to describe, in italics, the children's actions. The rows in each transcript have been numbered so that particular sections of the play can be referred to throughout the vignette and analysis which follow.

What follows are brief descriptive summaries of the two episodes of play in the bushes, written to give an overview of the whole scene before using multimodal transcripts to examine smaller

selections of the play in greater detail, followed by reflection on the choices behind the transcript design and a discussion section drawing together findings of the case study.

Pretend Play: Vignette

The first recording begins with Ben lying down on a pair of chairs pushed close together. Jake states, “I’m gonna be in the same room as you, I am” as he picks up and moves a third chair, with Ben asking, “Are you gonna sleep with me?” Together they negotiate moving the chairs, jostling and readjusting their positioning until the chairs are arranged into two pairs, close together, against the fence. When they are in this position, Ben comments, “Now we have room to sleep good”. Jake tests out the new arrangement, lying down on a pair of chairs with his head towards Ben, but the close proximity seems to cause a problem. Lying down with his head so near to Ben’s feet, Jake suggests, “Or maybe- can you put your feet that way?” pointing away from him. This highly active reorganisation of the chairs and their bodies unfolds over less than forty seconds.

Their play is briefly interrupted by Maddie, who approaches the bushes and can be heard to say, “I hope no boys is in my shed”. She then stands in the entrance to the bushes, although out of camera shot, and says, “Hey, I THINK some boys is in my shed, and I’m not impressed”. The play is suspended momentarily as the boys look towards Maddie, who then leaves to play elsewhere. Jake resumes the theme of sleeping as he lies down on the chairs again, this time with his head away from Ben, and with Ben’s feet facing the opposite way.

Jake announces brightly, “Morning time” as he gets up, which Ben responds to by briefly leaning towards the chairs, as if going to lie down, then sitting up again. Ben introduces a new suggestion into the play by asking Jake, “Will you take me to the doctors?”, repeating his request when he at first receives no reply, then turning to leave the bushes. As Jake busily moves one of the chairs opposite the fence he states, “No, no, no, no, this IS the doctor’s”, calling after Ben as he exits.

Ben is gone for just over 30 seconds. While he is away, Jake sets about moving all four chairs into the space opposite the fence. Whereas previously the chairs had been arranged close together in pairs, he takes time to carefully rearrange them into one row. As he positions the final chair, Jake says, “My bed” and lies face down on all four chairs. After remaining still in this sleeping position for almost ten seconds, Jake climbs up and says in a questioning tone, “Baby?”, walking towards the exit as Ben is dashing in. Ben begins to tell Jake about a confrontation which took place with another child outside of the bushes, but then seems to become more concerned by the changes that have been made to the chair arrangement in his absence. Jake reassumes his sleeping position as Ben looks back and forth around the space, saying, “Hey. Why that there and not there? ‘Cos I need these ones and you need these ones.

These ones are mine and those ones are yours", as he gestures to the positions the chairs had been in previously and then their current location. Jake joins Ben in repositioning the chairs as they had been before, in pairs close to the fence, although this time Jake requests that he could be in the corner. Ben begins to dispute this, but Jake chooses to leave the bushes and asks Ben to look after the chairs in his absence, signalling the end of this particular stretch of play. The arrangement and rearrangement of the space unfolded busily over less than three minutes of play.

Later in the same afternoon, I noticed that Jake and Ben's play in the bushes had resumed, and that two other boys from their class, Max and Lucas, had joined them. Two more chairs had been brought into the area and rearranged into a new formation, in a line behind one another. Their pretend play now revolved mainly around journeys, with discussion of being "in the aeroplane" and negotiation of mechanisms and conventions for depicting travel. For instance, at the start of the recording Ben demonstrates an action to signal arrival to Lucas and Max, explaining, "When I ding this is means we're there, 'kay?" as he pulls down sharply on a branch and calls, "Ding!"

Several different adventure-type themes are introduced by the children throughout this two-minute play episode, such as dealing with "baddies" and responding to "an emergency". The transcript shows a short extract (1 minute 5 seconds to 1 minute 20 seconds) from the longer episode. The transcript represents the play immediately after Max, Lucas and Ben have excitedly gone deeper into the bushes responding to Max's announcement, "I can see treasure!". Max then claims to have got the treasure, and the boys squeeze backwards through the bushes towards the chairs as Jake, who had remained sitting, confidently shouts, "It's starting to go! Everybody seatbelts on." The boys then quickly make their way back to the seats. Max and Lucas, at the front of the arrangement of chairs, use gestures and noises which seem to simulate the motion of a vehicle, shaking a nearby branch and making engine-like sound effects. Meanwhile Jake and Ben, sat beside one another at the back of the arrangement of chairs, pretend to put on their seatbelts.

This is followed by Ben's twin brother Edward rushing into the bushes shouting about an emergency. The boys excitedly respond to this prompt, standing up and talking over each other with reassurances that "I'll do it", "No, I will do it", followed by all the boys except Jake leaving the bushes. The active play scenario represented in the transcript all unfolds in the space of fifteen seconds.

Analysis

What follows is an analysis which considers how these children in these stretches of pretend play established, negotiated and sustained their play multimodally with the resources and space

available to them, and what this might reveal not only about the interests of the children but also the ways we observe and recognise social sign-making in play.

Children as Designers of Play Spaces

A first point of discussion in the analysis of this episode is the children's choice to play in this particular area of the nursery. The space in the bushes was observed to be a popular place for play throughout both the data collection phase and my time working there as a teacher. Whereas the children in this episode could have chosen to play indoors, where a selection of traditional 'home' play resources were available, or in an open area of the garden where there would have been more room, their choice to play inside the bushes seems to suggest it offered qualities and possibilities worthy of close consideration.

The area provided a play space that was small and enclosed, not only in terms of the fence and bushes, which acted like walls, but also the low ceiling-like canopy created by the trees. This natural den-like enclosure seems to have been an apt setting for the domestic spaces the children play out in Transcript A, and for signifying the imagined enclosed 'aeroplane' in Transcript B. This space was part of, but separate from, the rest of the outdoor play area, used as a distinct base, with coming and going to and from it signifying aspects of the play narrative (e.g. going to the doctor's, going to find treasure). In this way, the area in the bushes seemed to represent a home and sanctuary as well as a point from which to depart into other imaginary scenarios.

A particular feature of the space in the bushes was its secrecy. Although it was well known and well used by the children, it was on the margins of the outdoor area and hidden from view. The importance of a secret hiding place resonates with the themes the children were exploring in this episode of play, which related to aspects of danger and safety, such as "baddies", and an "emergency". It also potentially offered a place to escape real conflict, as Ben speaks at one point of returning to the bushes because "some girl was gonna hit me" (A17). The choice of this play space may be related not only to the privacy it offered from other children, but also from adults, as it was easily accessed by the children through the small entry points, but difficult for anyone larger to enter.

A further feature of this play space is its somewhat wild character. The recordings show that the children were aware of the natural qualities of the space and incorporated aspects of this into their play. For instance, Jake grabs a handful of leaves that he offers to Lucas as "chocolate", and a nearby branch is manipulated as if it is a kind of brake or lever (B3). These instances demonstrate the children making apt selections from what is 'to hand' in order to represent themes in their play, which can be seen as a meeting point between the affordances of the materials and the interests of the sign-makers, based on principled selection. The leaves act as

an appropriate representation of ‘chocolate’, for instance, perhaps because of their hand-held, portable size, and organic properties as akin to ‘food’. The sturdy but moveable branch is used as part of the imaginary aeroplane control system, large and strong enough in size and shape to be like part of some mechanical device and within easy reach of the front chairs to be manipulable. In this way, wild features of the natural play space were assigned new meanings which related to the play.

As well as choosing to use this space and its natural features for their pretend play, the children also made a choice to place a number of child-sized chairs in the space. The rearrangement of chairs is taken not merely as preparation for the play, or an insignificant irrelevant aspect, but as a motivated sign giving insights into how the children design and use a space to ‘mean’ a particular place. The chairs offered particular potentials in that they were portable yet sturdy child-sized versions of a practical real-world object. However, in their different configurations and uses they communicate meanings beyond their intended function as a school chair, to denote objects such as beds and airline seating as well as larger scenes and themes, such as home and travel. Attending to precisely how this is achieved gives insights into how meanings are multimodally constructed and communicated in play, and reveal children’s subtle understandings of the social arrangement of spaces.

The first arrangement Jake and Ben create with the chairs is moving them from an open configuration (A1) into pairs which they use for sleeping (A6). They are careful to ensure that the chairs are positioned as close to the fence as possible and into discrete pairs which are only a couple of inches apart. Discussing the fact that they will sleep together “in the same room” (A2), the fence seems potentially to signify a room’s wall, with the chairs representing the furniture pushed up against it. The proximity of the chairs to one another seems to represent the intimacy of the domestic, familial situation their play centres around. This contrasts with the second episode of play, where the chairs have been rearranged behind one another into a straight line (B1). In this instance, the spatial emphasis is not so much on close proximity to one another but on shared directionality, facing the same way. This arrangement has similarities to the rows of seating found in many modes of transport, conveying a vector-like sense of movement despite the chairs physically remaining still, contributing to a play theme that is concerned with travel. In this way, it seems that the arrangement of chairs, through qualities including their proximity and directionality, can be interpreted as motivated signs of the children’s interests and understandings of different social places, purposefully designed to create certain settings for their pretend play

Throughout the play it is evident that the potentials of these spaces, and the meanings made with them, must be negotiated and co-constructed for the play frame to be sustained. This emphasises the flexibility of certain play spaces, and the ways in which children bring different interests and ideas to their play. For example, Ben introduces a prompt into the first episode of

play, asking Jake, “Will you take me to the doctor?”, which Jake responds to with an emphatic, “No no no no, this IS the doctor’s” as he begins to rearrange the chairs (A11-14). This seems to illustrate the willingness of Jake to re-design what had moments earlier been a ‘home’ play space into a ‘doctors’ play space, although Ben appears unconvinced, and when he returns, this theme of the play seems to have been forgotten as the chairs have been rearranged into a bed. Whilst the ‘doctors’ play theme is not realised, Jake’s comments and willingness to rearrange the space can be taken as an indication that he is aware of his own capacity as a designer, and of his ability to make meaning through shaping spaces.

The momentary interruption from Maddie seems to further illustrate the potentials of spaces to represent different play settings, and the need for negotiation of these pretend meanings between the players. Maddie adopts a playful tone when she admonishes the boys for being in her “shed”. It was a rule of the nursery that the nearby sheds, used to store heavy outdoor play equipment, were not to be accessed by children unaccompanied, and it seems that she is playfully adopting an adult-like role in her communication with the boys in this instance, including the curiously adult phrasing she uses (“I hope no boys is in my shed” – A6; “…I’m not impressed” – A9). The boys do not verbally respond to this interruption, but Jake appears to reiterate their own play theme by lying down on the chairs (A10). With Maddie’s alternative interpretation of the space clearly not shared, she soon leaves to play elsewhere. These observations highlight the versatility and flexibility of certain play spaces, perhaps particularly the ‘wild’, child-appropriated den-like space in the bushes that features in this episode, and children’s agency in making meaning in these spaces.

Accommodating the Other in Play

As the analysis of the spatial design illustrates, in their domestic role play (Transcript A) the children emphasised ‘closeness’, both literally in terms of the proximity and positioning of the chairs as beds, but also within an overall play theme related to homes, families and care-giving. It seems particularly important to the boys that they get to sleep together in the “same room” (A2), depicted as being in ‘beds’ close together. However, the constraints of the enclosed space and the closeness of the chairs leads to difficulty when the boys try to lie down but do not have enough room to comfortably ‘sleep’ without Ben’s feet being worryingly close to Jake’s head (A7-A8). The children then carefully move the chairs along the fence and change their sleeping direction. This can be interpreted as an instance of the limits of the space shaping the play, revealing how children negotiate its potentials and constraints. It also suggests that pretend play involves accommodation of one another, both physically in terms of the limits of space, and through developing a sense of awareness of the needs and ideas of others and sharing others’ imaginings.

Accommodating and making concessions also occurs when Ben leaves the bushes (A15). In Ben's absence, Jake carefully rearranges all four chairs into a line opposite the fence, lying facedown and calling his new configuration "my bed" (A16). Unlike the 'beds' he and Ben had made previously, the use of all four chairs and Ben's absence offer Jake ample space to easily and comfortably stretch out. However, after ten seconds of 'sleeping' in this newly created space, Jake appears to grow bored and goes looking for Ben, moving towards the exit and asking in a curious tone, "Baby?" (A17). Although Jake had more chairs and more room in Ben's absence, it seems the play was then lacking the crucial component of a play companion. Jake's move to go looking for Ben, and his readiness to then rearrange the chairs as they had been before (A19), seems to be an acknowledgement from Jake that the togetherness, the potentials and enjoyment of social play, outweighed the challenges and concessions necessary for this play to happen.

Closeness and accommodation seem to continue as themes between Jake and Ben in the second episode of larger group play. When responding to Jake's announcement and returning to the chairs, Ben momentarily pauses and looks at the empty seats behind Max and Lucas before choosing to sit in the seat beside Jake (B2), continuing the physical and social closeness which had been evident between Jake and Ben in the first extract of play. Ben then briskly performs a gesture that seems to represent fastening a seatbelt, making quick jabbing motions to either side as he makes connection-like sound effects, "kch, kch" (B3-B4). Jake watches intently but seems dissatisfied, saying, "You put this- N-no. Shall I put your seatbelt?" (B4-B5), then mimes fastening Ben's seatbelt for him (B5-B6). This action is curious since it is a minor detail of the unfolding play, yet the action of 'incorrectly' or 'correctly' fastening a seatbelt is evidently of particular significance to Jake in this moment.

Comparison of how the two 'seatbelt' gestures differ offers some insights into what was potentially most salient to each of the boys and the meaning behind this action. Ben's gesture is simple and swift, as if complying with Jake's command is his main interest at this point in the play. He seems to assume the role of passenger, taking his seat beside Ben at the back of the row of chairs. Compared to Ben's gesture, Jake's 'seatbelt' action emphasises stretching right across Ben and making a careful two-handed connecting gesture to Ben's side. This is slower and more detailed than Ben's brisk gesture, and could be considered to be more like the real-life action of fastening a seatbelt. The action is reminiscent of the careful way a parent might take responsibility for fastening their child into a vehicle and could suggest that in addition to playing the role of a passenger, Jake also takes on a role of responsibility for Ben. This can be seen to be a continuation of the caregiver role which Jake had assumed towards Ben in the first extract, calling him "baby" and being the one Ben asks to take him to the doctors.

It is also a potentially significant moment that highlights the way interaction takes place both within a play frame, in the context of the imagined scenario, and outside of this frame,

negotiating the play. This action could be interpreted as a demonstration of Jake taking on a role of leader or expert in directing the play, taking time to demonstrate precisely how he wanted Ben to respond to his prompt, illustrating the seriousness of the play acting. By contradicting Ben, there is the suggestion that he has performed this action wrongly, and that his own gesture is right, whether this is in a pretend role as caregiver or as a friend and play companion. This short instance demonstrates the ambiguity between in-frame and out-of-frame play communication, both for the purpose of analysis and also for the players themselves. It serves to demonstrate that within every pretend play scenario there are real friendships, real experiences, real interests and emotions underlying every interaction and every choice in communication, illustrating what a complex and layered activity play is.

Role Play as Improvisation

As well as spatially accommodating one another, accommodation of each other's ideas and interests is evident throughout the episodes in this case study. The children make suggestions and invitations relating to the theme of the play, such as announcing that it's morning time, that they want to be taken to the doctors, or that there is an emergency to be dealt with. There are also prompts that are unspoken, such as Jake's decision to lie on all four of the chairs when Ben returns to the bushes (A18). Such prompts or proposals seem to be a means of jointly constructing and developing an imaginary narrative, with the open-ended, collaborative nature of play leaving each proposal open to a variety of responses. Close multimodal analysis provides a means of examining how play can be considered as an act of improvisation, making meaning socially and in multiple modes.

Transcript B enables particular consideration of how a group responds in a variety of ways to a proposal offered by one child in the context of their pretend 'aeroplane' play. Whilst Lucas and Ben are deeper in the bushes following Max to look for 'treasure', Jake remains seated but calls to them loudly, "It's starting to go! Everybody seatbelts on." (B1). This immediately gains the attention of his three friends, who rush back to the arranged chairs and simultaneously take their seats (B2). From this point, the children's responses to Jake's proposal diverge in somewhat different directions along a shared theme. Seated at the front of the arrangement of chairs, Max firmly grasps a nearby branch as if to simulate action with a brake or lever, making an "ooooh" sound somewhat like an engine humming or starting up (B3-B4). Lucas then grabs and vigorously shakes the same branch, making a sound like "nuh-nuh-nuh-nuh-nuh", rising in pitch, reminiscent of a revving or spluttering engine sound (B6-7). Their physical positioning, sequentially in the first position at the front of the arrangement of chairs, locates them in the equivalent of what might be considered the driver's seat. Although these seats remain stationary, the children's positioning, actions and sounds communicate the idea of moving and traveling in a vehicle at speed. In multiple modes, though in the absence of language, Max and Lucas have taken control of putting into action Jake's proposal that "it's starting to go".

Whilst this is unfolding between Max and Lucas, a different aspect of the play theme seems to develop between the other two boys. Choosing to sit beside Jake at the back of the arrangement of chairs, Ben mimes putting on a seatbelt, then Jake carefully suggests he does this for him. For Jake and Ben, the interest in the play is not so much in the travel of the vehicle, which is being taken care of by Max and Lucas, but in enacting Jake's proposal of "Everybody seatbelts on". Their location side by side, their glances to one another, and the particular care that is taken over precisely how the pretend 'seatbelt' gesture is performed demonstrate that Ben and Jake are co-constructing roles as passengers within the 'travel' play theme, rather than drivers or pilots.

In response to the same initial proposal, the four boys' play develops into two different but connected parallel strands. Although the overarching play theme might be 'travel', close analysis of what is 'criterial' to the children in their responses, in multiple modes and in combination, offers insights into subtly different interests and ideas. For Max and Lucas, what is central to the 'travel' theme is movement, direction, noise and control of their imaginary vehicle, whereas Ben and Jake develop 'travel' as journeying side by side, keeping each other safe. Whilst the boys might at first seem restless and disorganised in their play, moving rapidly between themes (such as home and doctors, baddies and treasure), close analysis reveals they are intently focused on social meaning-making, cooperatively co-constructing in different, but related, ways. It seems that the group does not want to be still or focused only on one story, but that they are continually and creatively improvising on a theme in response to the suggestions of others, of the space, of what is to hand, and their own interests, experiences and friendships with one another. Multimodal social semiotic analysis suggests that this kind of play ought not to be mistaken as disorganised or random, but that its improvisational qualities can be considered organization in-action, recognising the principled choices children make in their co-construction of play at every moment. Key to recognising these qualities in play is a transcription system which enables consideration of play themes which develop in parallel, over time and in multiple modes including the arrangement and re-arrangement of the play space.

Transcript Design: Grid

The clips in this case study were initially re-viewed and transcribed using *ELAN*, annotating each participant's action and speech in tiers on a timeline. 'Action' was used as an encompassing term that included gesture, movement around the space and manipulation of resources. Even with this 'glossing', with 5 participants (Transcript B) the timelines became loaded with ten tiers that were a challenge to usefully and succinctly review. Nonetheless, this process of close transcription enabled 'noticings' relating to the features of the play that in turn enabled selection of shorter sections for multimodal transcription to examine these 'rich points' further. This included attention to the children's repeated movement of the chairs, and the ways

in which a group responded to a play 'prompt' in a larger group scenario. Throughout the transcription process I recorded notes and reflections, both on choices made in the creation of the transcript, and relating to analytical insights which emerged through this close attention to and re-presentation of the children's pretend play.

I experimented with representing the selected extracts in playscript style and as a lengthy descriptive vignette. The main challenges of these formats were describing the changing organization of the space and the multiple children's movements, and clearly representing aspects of the interaction that were unfolding simultaneously. Responding to this first challenge, I sketched 'birds-eye' plans of the chair configurations then rendered these digitally to be incorporated into the transcripts to highlight how the children were rearranging the space in their play. In response to the second challenge, I experimented with various timeline and 'grid' style transcripts that enabled me to show aspects of the interaction in separate columns, unfolding vertically over time, maintaining the quality of simultaneity. After some experimentation with a timeline layout, a grid system was preferred for its clarity and the possibility to represent longer stretches of play due to condensing time into non-standardised divisions along the vertical plane.

Grid-style transcripts have been used widely in multimodal research (see Baldry & Thibault, 2005; Bearne, 2009; Flewitt, 2005; Lancaster, 2007). In such a format, columns are commonly used to separate out modes for close attention whilst maintaining a sense of the 'whole' ensemble, inviting readers to note connections and patterns within and between modes. In creating the pretend play transcripts, I experimented with separating out modes and also modes for each participant (e.g. Jake Action, Ben Action, Jake Talk, Ben Talk) but found this appeared somewhat fractured and lacked clarity, particularly in the case of Extract B with four participants. The final design draws upon a Reggio Emilia observation 'chart' which is discussed as a device for listening to and interpreting children's ideas and theories in their project work (Giudici & Barchi, 2011). In this format, columns are included for each participant (children and teachers), but within each column are attempts to represent not only talk (in plain text) but also modes such as action and gaze (in italics). Within such a transcript, this means that there is no blank space for participants who are visible, since they are always present and considered active, even if they are silent or still. They may, for instance, be communicating through lying down, or through directing their gaze to empty chairs. In this way, the grid transcripts with participant columns are seen as a useful means of examining the role played by all children in pretend play, and the many modes which are used to signal active participation in play.

A challenge of the grid format is that in attempting to represent the multimodality and simultaneity of interaction, the transcript itself can rely heavily on the mode of writing to describe each mode. In an attempt to enhance the transcript, particularly understanding of the spatial arrangement and movement, the grid incorporates two columns attempting to represent the play

visually. The first is a column representing the chair arrangements, using small diagrams for simplicity and clarity since in the video stills the chairs are often momentarily out of view or obstructed. However, the diagrams' simplicity lose something of the actual interaction, particularly the boys' positioning in relation to the chairs and the qualities of the play space itself, so a second column includes video stills in an attempt to enrich the written and diagrammatic information. These visual columns are set to the left of the participant descriptions in an attempt to 'set the scene' spatially for the unfolding interaction.

A further challenge of the grid format is its density, since even when columns 'gloss' multiple modes, there is a great deal of information and an ambiguous intended reading direction – whether to read 'down' or 'across' the columns, or to attempt some combination. This might also be considered an affordance of such a transcript, in that it leaves open multiple reading pathways that account for both sequentiality and simultaneity depending on the chosen reading. A further challenge relates to time. I made the decision not to divide rows into standardised time units (e.g. a video still per row every second) as this would have made each transcript significantly longer or reduced the length of extract that could easily be depicted. To avoid the danger of becoming unhelpfully 'micro' in focus, the rows show sections of the interaction that could be clearly depicted, and did not include multiple stills of the same action. For instance, when Jake lies still on the chairs for 10 seconds (A16) this is described in the transcript, rather than showing multiple stills of this on-going action. Whilst this introduces an issue in terms of the transcriber directing the reader's attention, it is felt that it is nonetheless helpful in terms of the readability and clarity of the finished transcript.

This particular transcript design facilitated a number of insights. The inclusion of the chair plans and video stills was key for incorporating the spatial dimension into the transcripts and supporting attention to the ways the children designed and shaped their play environment. This enabled analysis of the symbolic function of the chairs and consideration of their status as a resource for meaning-making. Transcribing within this grid structure supported reflection upon the organisation of the children's play in an instance that initially might look somewhat chaotic, disorganised and restless. The transcript shifts emphasis from children's speech to the many embodied, visual and spatial means that are used in complex ways in pretend play of this kind.

Through representing the simultaneous activity of many participants unfolding over time, this format is considered a particularly apt means of examining group interaction in pretend play. Transcribing the simultaneous activity of multiple participants is challenging, particularly when we are interested in the multimodality of each participant's communication, requiring a careful balance of detail and clarity. The design of Transcript B enables particularly close attention to the parallel strands of play that developed in response to Jake's initial play proposal, and the different representational resources the two pairs of children drew upon in enacting different roles and making independent but related meanings along the same theme of play. The layout

of the transcript further supports this insight, grouping Jake and Ben together in the two left-hand participant columns, and Max and Lucas in the two right-hand columns to support 'reading' of the two play pairs. It supports close attention to a fleeting moment in the interaction which was initially puzzling - Jake and Ben's differing seatbelt gestures – and provides a means of examining what was criterial to each in their gestures, supporting interpretations about what this might reveal related to their play. Such a transcript was considered an apt noticing device for supporting consideration of group interaction in pretend play, socially co-constructing meanings, and expanding the scope of analysis to consider what several children are *doing* in multiple modes when speech may or may not also be present.

Discussion

These transcripts supported multimodal analysis that highlighted the capacity of children engaging in pretend play to design, construct and make meaning through combinations of spatial, embodied, material and verbal modes, with their choices revealing signs of their interests and understandings. This symbolising activity inherent in pretend play has often been related to early literacy development, with the literature tending to imply that pretend play is a valuable 'basis' (DeZutter, 2007) or 'precursor' (Genishi & Haas Dyson, 2014) for literacy development. This reinforces the rhetoric of play as progress outlined in Chapter One (Sutton-Smith, 1997), in this case play as preparation for reading and writing. A multimodal social semiotic perspective shifts the emphasis to recognising play as valuable multimodal meaning-making in its own right.

This case study focuses particularly on children's arrangement of a pretend play space. I suggest that the children's choice and arrangement of space is an important part of the play itself, not merely preparation or an irrelevant aside to the play, but meaningful activity that highlights children's agency as architects of their pretend play. As Hancock and Gillen note, such activity is at risk of dismissal as 'fidgeting', yet close attention to that which may not usually be considered significant offers insights into children's embodied spatial relations with places (Hancock & Gillen, 2007).

The analysis supports the finding that young children often seek out places of seclusion and privacy, particularly on the margins of outdoor spaces (White, Hargreaves, & Newbold, 1995), and Rogers and Evans' observation that pretend play in dens can offer time away from the "adult gaze" with more opportunities for independence (2008, p.108). This insight invites further reflection upon the affordances of play spaces (see Kernan, 2014) in multimodal terms, and consideration of what early years environments support or prohibit in terms of pretend play. It raises questions, for instance, about the constraints of the current trend for open-plan early years settings and surveillance of children, and how settings might incorporate spaces that are private and secluded.

The findings of this case study raise further questions in relation to the adult's role and children's agency. It appears that the child-sized dimensions of the space, and the child-sized chairs the children chose to incorporate into their play reflected a desire to design and create play spaces which they have ownership of and which reflect their individual and shared needs and interests, playing in a space which was not specifically made *for* them but made *by* them. In contrast to the 'role-play corners' found in many early years classrooms, which are usually designed and resourced by the adult on a particular theme (e.g. home, police station), we might consider the potentials of flexible spaces and materials which support children in their own designs of spaces for pretend play. Similar observations have been made by Garrick et al. in their report of children's experiences in the early years, which found that "where children had access to varied and flexible resources and a relatively large, undefined area for play, they identified a wider range of play interests and more complex play" than settings with adult-created, themed role play areas (Garrick et al., 2010, p. 34; see also Broadhead, 2010). Furthermore, Verba (1993) suggests that play environments resourced with abstract objects (e.g. blocks and scarves) might be particularly valuable as they challenge players' symbolisation processes and stretch their abilities to coordinate sign usage when referents are less obvious (DeZutter, 2007) as well as offering rich potential for co-construction of imagined play settings. The space in the bushes, in contrast to the more maintained and manufactured materials and environments in the nursery, was comparatively wild, versatile and flexible, which could perhaps be considered more richly open-ended in the imaginative and communicative potentials it offered. A multimodal social semiotic perspective therefore invites reflection upon how environments, materials and the adult's role might best support, recognise and give value to play as a powerful context for social meaning-making.

Despite general agreement that pretend play combines "actions and utterances" as communication of meaning (Harris, 2000, p. 30), transcripts of pretend play in research have tended to foreground children's use of language and make minimal descriptive notations related to actions and use of objects (with a few notable exceptions, such as Wohlwend, 2011, 2012; Wood, 2014). The findings in this case study emerged through use of a transcription format which includes representations of the changing chair arrangements, offering insights into the ways the children designed and re-designed the space throughout their play. Jake and Ben's repeated moving of the chairs may at first seem restless, fidgety and disorderly, only to end up with the chairs back in the same original formation they started in. However, multimodal transcription supports attention to the ways these chairs are used to communicate meanings related to the play theme, suggesting that children's design of space is an important, though under-recognised, aspect of play-as-multimodal-text. The transcripts also address a challenge identified by DeZutter relating to analysing play as group improvisation (2007). Whereas developmental psychology has tended to focus on play in terms of individual cognition, the transcripts seek to illuminate the interactional nature of pretend play, including how this unfolds

over time. The design of the transcripts accommodates multiple participants and focuses attention on their multimodal communication, supporting detailed analysis that makes visible the complex and intentional ways in which pretend play is co-constructed between a group of young children.

Chapter Seven

“I need to press this crack”: Block Play Case Study

This chapter focuses on an episode of child-initiated play with wooden building blocks. It begins with a brief discussion of the history of block play and its place within the EYFS. The case study outlines the context of the play episode and provides a descriptive vignette, with detailed multimodal transcripts representing shorter extracts to enable detailed analysis. A discussion follows, drawing together key themes which emerged in this play episode: block play as multimodal design, co-construction of narrative, and multimodal rule negotiation. The chapter concludes with reflections on the aptness of the particular ‘comic strip’ transcript design in depicting play of this kind and its role in supporting multimodal analysis.

Block Play and Learning

This case study focuses on an episode of block play that occurred inside the nursery classroom towards the beginning of the period of data collection. As part of the nursery’s continuous provision, a selection of wooden blocks was permanently available to the children, stored on child-height shelves next to the large carpet area. With a long history that can be traced back particularly to Froebel’s ‘Gifts’ (Froebel, 1895; Quinn, 2013), blocks have often been associated with play and learning, and remain a common resource in many early years settings today. In particular, it is common to find unit blocks of the kind devised by Caroline Pratt (1867-1954), which were central to the experimental practice in the ‘City and Country School’ in New York (Pratt, 1948). This approach valued blocks as particularly important adaptable construction materials for children. Such unit blocks typically share modular dimensions based around a standard unit (for instance, half-unit and double-unit blocks), supporting building that explores equivalencies and echoing Froebel’s belief that blocks help children develop understanding of interconnection between objects (Froebel, 1895; Quinn, 2013).

Blocks receive specific mention throughout the Early Years Foundation Stage guidance, including the recommendation that the learning environment should “have large and small blocks and boxes available for construction” (British Association for Early Childhood Education, 2012, p. 36). In the EYFS, block play is referenced in relation to young children’s ‘moving and handling’ in the prime area of ‘Physical Development’, also within ‘Mathematical Development’ in the aspect of ‘shape, space and measure’, and within ‘Expressive Arts and Design’ as a means of ‘exploring and using media and materials’ (Department for Education, 2017). It is suggested that the practitioner should observe children’s play and note children’s balancing and stacking of blocks, which, according to the EYFS, ought to eventually develop towards making enclosures and creating spaces, with an emphasis on creating increasingly complex structures.

This developmental perspective on block play has parallels with Guanella's work summarising progression of children's building ability (Guanella, 1934), which she suggests develops from one-dimensional linear forms to two-dimensional enclosures, with "the three-dimensional envelopment of space marking the climax" of block play development (Gura, Bruce, & Froebel Blockplay Research Group, 1992, 53). Reifel and Greenfield add that "complexity of constructions increases with age" (Reifel & Greenfield, 1982, 205), also emphasised in the age-related categories of assessment in the EYFS (British Association for Early Childhood Education, 2012; Standards and Testing Agency, 2016).

This developmental perspective has influenced studies of block play including the work of Cohen and Uhry (2007, 2011). Such studies tend to place high emphasis on the products of block play as opposed to processes, and the children's ability to name and describe their block structures. Using a series of rating scales, the authors employ a tightly defined code-based approach to rate the children's block play. This chapter will query whether complexity in block play may be signified not only in arrangements of blocks and verbal discussion, but in the process of collaborative play as multimodal text-making.

An Instance of Block Play in the Nursery

The play episode in this case study features Joey and Zack, two boys who were close friends and the oldest children in the nursery class (both 4 years, 10 months). The boys regularly played together as a pair and showed a particular interest in practical hands-on construction activities such as block play. It was less common to see Joey voluntarily choose to engage in adult-led activities, and uncommon for him to initiate typical 'literacy' activities such as mark-making. In their play, the two boys were joined by Lizzie, an outgoing 4-year-old girl who did not regularly play with Joey and Zack, but often took on the role of leader amongst different groups of children. In this extract however, she is less clearly leading the play, seemingly intrigued by Joey's construction and finding a 'way in' to his play scenario.

In this episode of play, Joey and Zack carried a number of wooden blocks from the nearby storage shelves, placing them onto the long window ledge beside the carpet area that looks out onto the playground outside. Amongst the other objects stored and displayed on the window ledge, including a pot plant, a box of measuring equipment and a wooden rainbow arch, Joey and Zack created a space to build and play. They stood side by side facing the ledge, Joey on the left and Zack on the right, focusing mainly on their own individual constructions which are directly in front of them. In their play they combine the blocks with a number of small plastic creatures selected from the drawer of 'minibeasts', which were stored on the other side of the classroom.

Drawn to the fact that the boys were choosing to build in an unusual space in the classroom, and knowing that block play was a common and favourite activity of many of the children in the Nursery, I video-recorded the play from the far-right end of the window ledge. This gave an elevated side-angle on the play, looking down onto Joey's construction whilst also recording his hand movements, facial expression and interaction with Lizzie further along the bench to his left, but did not focus on Zack, who was constructing directly below the camera and was mostly out of shot. Other children were playing with blocks nearby on the carpet area, and can be heard in the background of the recording, occasionally coming over to the windowsill to where Joey and Zack were playing.

During the play, Lizzie showed interest in the block construction Joey had made and in finding out how it operates, seeking to move her own toy minibeasts inside the enclosure he has created. First, Joey explains and demonstrates to her how his 'house' works, but then presents Lizzie with increasingly complex rules and conditions for entering, which seems to become part of the play itself. Close examination of this extract reveals how objects are combined and animated in play, how a play narrative is collaboratively constructed, and how rules are established and negotiated.

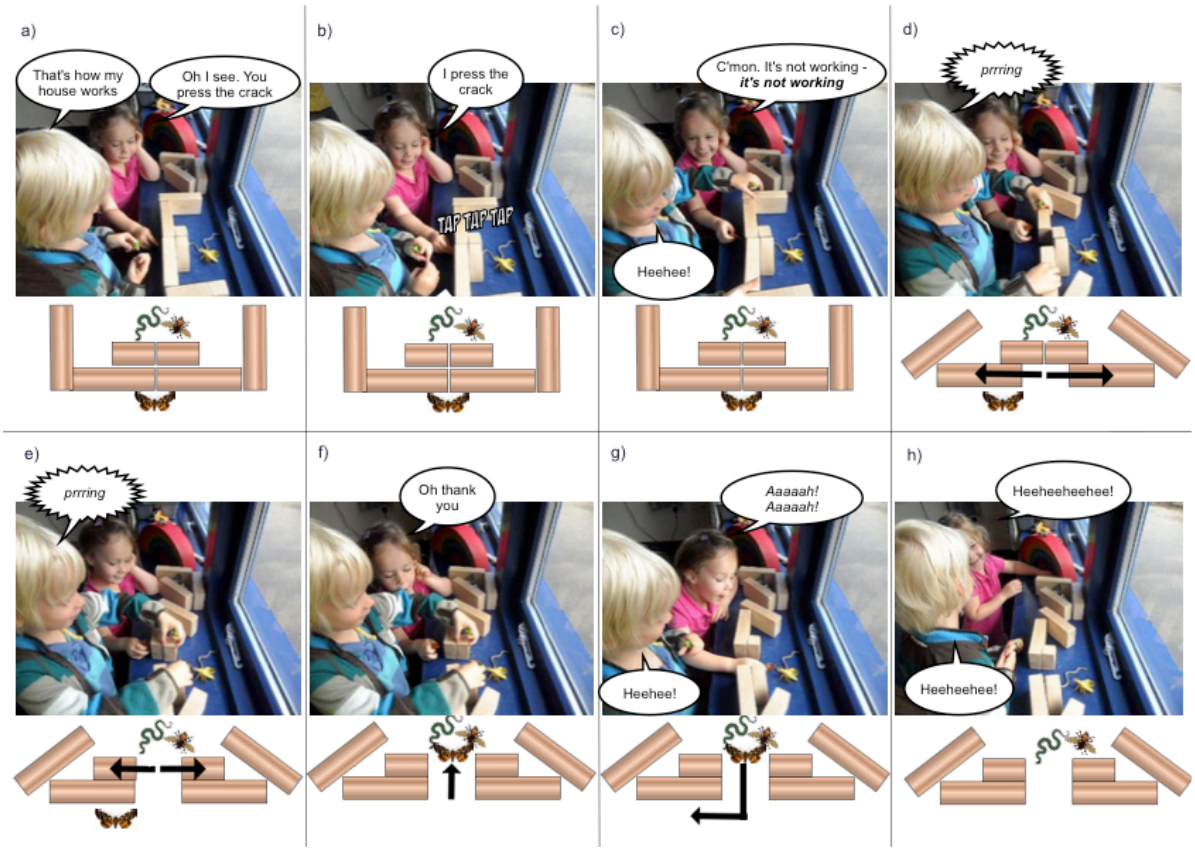


Figure 7.1: Block play transcript 1

Figure 7.2: Block play transcript 2

The entire clip is 9 minutes and 20 seconds long, with Figure 7.1 representing an extract from 1 minute 58 seconds to 2 minutes 24 seconds, and Figure 7.2 representing from 3 minutes 44 seconds to 4 minutes 54 seconds. In creating these transcripts I have used a comic-strip style format to provide a visual means of re-presenting and analysing the children's use of voice, gaze, facial expression and gesture (presented in the video stills and overlayed text) as well as arrangement and movement of blocks and minibeasts (presented in diagram form below the video stills, as a top-down view from Joey's perspective). A reflection upon the gains and losses of this transcript design follows at the end of the chapter. The frames in each transcript have been labelled alphabetically so that particular sections of the play can be referred to throughout the vignette and analysis which follow. Since the children use their voices to create sound effects and take on character roles in the play, the transcript attempts to depict aspects of voice quality in its design. Jagged-edged speech bubbles depict a use of voice as sound effects (e.g. 1m - "pchew" as the door opens), bold text represents the children's use of low pitch, and italics their use of high pitch. Text and arrows layered on the video stills attempt to show actions such as tapping the crack (e.g. 1b) and handing the minibeasts (e.g. 2c), with arrows on the plans representing the movements of blocks and insects. The two transcribed sections of video recording are used to support detailed insights, but a short descriptive 'vignette' of the play episode follows to first establish the overall scene.

Block Play: Vignette

The recording begins with Joey arranging six wooden blocks into an enclosure around toy insects using the window as a fourth wall (in the same formation as the block diagram, Transcript 1a) As he moves the blocks apart and together, he vocalises machine-like sound effects sounding like "pcchh" and "prrrr". Beside him, Zack is also building an enclosure, and can be heard to say, "This is my battery" and, "We need that battery there so it opens all by itself – you just press the button - opens all by itself". The idea of homes with batteries was a common theme in much of the construction play I observed during data collection, particularly between Joey and Zack. These constructions were typically symmetrical block arrangements with compartments and enclosures, built side by side on top of shelving, containing toy insects which they animated in dramatic play.

Lizzie, who had been playing alone further along the window ledge, uses a low-pitched voice to ask, "Can I come in your house, Joey?" What follows is Joey's first demonstration of how his enclosure operates, and the rules he has devised for entering. He instructs, "You need to go in the other door". Lizzie tries to manoeuvre the toy snake she is holding round the 'back' of Joey's enclosure, asking "Where? Where's the door?" Joey explains, "You need to press that crack", pointing to the 'front' of the arrangement, where the pairs of blocks are pushed together. Lizzie uses the snake to press the crack as instructed and Joey swiftly moves the bricks apart with

both hands, making noisy mechanical sound effects. Lizzie watches closely, and as soon as the 'door' is opened, moves her snake into the enclosure, commenting, "That's a funny door". Joey moves the blocks back into the positions they had started in, making more mechanical sounds, then clarifies, "That's how my house works".

The play represented in Figure 7.1 depicts the interaction following this initial demonstration, with Lizzie again trying to access Joey's house and test out the rule of 'pressing the crack' to gain entry (1b). As can be seen in the transcript, this time Joey delays opening the door after the crack is pressed, causing Lizzie to challenge him: "C'mon, it's not working", then more loudly, "It's not working" (1c). Eventually Joey performs a similar series of actions to open the door and allow Lizzie's insect to enter (1d, 1e, 1f). Once in, however, she animates the insect screaming, "Aaaaah! Aaaaah!" and quickly manoeuvres it out of the enclosure as if running away in fright (1g). Joey and Lizzie look at one another and laugh (1h).

Following the play depicted in Transcript 1, Lizzie briefly talks to her friend Clara who is keen for them to play together. Lizzie declines Clara's repeated invitations to go outside together, seemingly preferring to continue the game she is part of with Joey. Lizzie attempts to repeat 'pressing the crack' once more. This time, however, Joey has left the central blocks apart, and when Lizzie says, "I need to press the crack", he tells her, "The crack isn't there any more". Lizzie accepts this and with a tone of disappointment states, "Oh", moving her insect into his house through the empty gap.

Playing alongside Joey, Zack then proposes an idea relating to their imaginary play, suggesting, "Pretend it was night time now, wasn't it?" Joey agrees and turns his model bee and grasshopper over so that they are lying on their backs with their legs upwards, as if to depict being asleep. He has arranged the bee inside the enclosure and three other insects balanced in a symmetrical arrangement on the blocks. Figure 7.2 shows this arrangement and represents Lizzie's next attempt to access to Joey's house.

Once again, Lizzie presses the crack. This time Joey presents new rules and conditions which must be met. He uses voice and movement of the insect to convey speaking in character, instructing Lizzie to first "ask the captain" (the plastic bee) and then "wake up the babies" (the other plastic insects) (2f, 2g). Finally, when she has done this as requested, he wiggles his fingers above the blocks and makes a buzzing sound, then moves the blocks apart with explosive sound effects (2l, 2m, 2n). Joey then announces that, "If you want, everyone can come in" (2o). Lizzie moves two of her insects through the opening into the enclosure, and makes the third quickly exit screaming as before (2p).

Following the interaction depicted in Transcript 2, the enclosed space becomes full of insects placed there by Lizzie and Zack. Joey picks up 'the captain' and holds it on the raised ledge,

ordering in a loud, low-pitched voice, “Too much people – everyone out” and removes the other children’s creatures from his enclosure. Joey re-forms his building and ‘fortifies’ it with minibeasts turned onto their backs as before. Lizzie attempts to gain entry again, calling, “Wake up!” In character and lifting up one of the insects, Joey responds, “It’s the middle of the night, go away”. Lizzie then sets about placing bugs into her own ‘house’, using the wooden rainbow arch on the window ledge and a small arrangement of blocks.

The play draws to a close as Joey announces “My baby and captain’s going out”, carrying two of his insects away from the window ledge. Lizzie then attempts to get her friend Ellie to play by initiating a similar game, moving parts of the wooden rainbow arch and telling Ellie, “You need to knock on this door”. Ellie, however, is more interested in playing outside and walks away from Lizzie, signalling the end of this episode of play.

Analysis

What follows is an analysis considering how these children, in this particular episode with the materials available, establish, negotiate and sustain their play multimodally, and what it might reveal not only about the interests of the children but also the ways we observe and recognise social sign-making in play.

Block Play as Design

A first point of interest in this episode is the children’s choice to set up their play on the window ledge, a space usually used by the practitioners for display and storage, and at a distance from the more common and convenient play space of the carpet area directly in front of the block shelves. Carrying the blocks this extra distance will have required greater effort, which we can take as a sign that this choice of play location was not arbitrary, but motivated and purposeful. It was a pattern of play behaviour observed multiple times throughout the period of data collection, with further construction occurring on top of raised shelving units as well as the window ledge.

If we take the chosen location as significant, we might consider how this space met some of the needs or intentions of the makers. Building on this raised surface required the children to stand up as they played, with the ledge coming up to their waists and allowing the blocks to be easily manipulated at hand height, as if standing at a workbench. As well as offering easy handling of the blocks, this location offered easy movement along the length of the ledge where other children’s constructions were being built in parallel. Furthermore, being set aside from and above busier areas of the classroom meant the children’s block buildings were less likely to get knocked down by other children. The smooth wooden ledge also provided a flatter, more stable surface for building than the carpeted area beside the blocks, with the window behind offering plenty of natural light. Building on the ledge required the children to be standing, and this

position afforded the particular perspectives of looking down on their building from above (through leaning in) and viewing the blocks from a side-angle (by stepping back), whereas constructing on the ground would not have easily accommodated both these views. The perspectives afforded by building on the ledge could be compared to those depicted in an architect's plans, offering angles on construction as both a top-down floor plan and a side view elevation.

The children's choice of location within the classroom seems therefore to have been a decision that enabled a particular kind of building, where seeing and manipulating from multiple angles was important. It literally elevated their constructions above the rest of the classroom activity, perhaps implying the seriousness that they were applying to the things they were making and their desire to keep their constructions safe from other more boisterous block play (for instance, building towers with the purpose of knocking them down, which was also observed during the fieldwork). Attention to the children's choice of play space illustrates significance in not only *what* is constructed, but also in *where* and *how* construction play takes place, illuminating the importance of the play environment to the building process.

The children made further purposeful selections with regards to the materials chosen and combined in the play, using wooden unit blocks alongside small plastic model minibeasts. Both resources were routinely 'to hand' for the children as part of the nursery's continuous provision, although stored in separate areas of the classroom. The choice to combine them invites consideration of what in particular each resource made possible in terms of its affordances. The blocks offered solid, sturdy building materials in a selection of simple geometric shapes, in plain unpainted wood. The simplicity of these blocks, and the quantity made available in incremental sizes, leant themselves to open-ended construction play, a characteristic which Smith calls "multi-referentiality" (Smith, 1979, p. 15) and which Gura et al. call the "uncommittedness of blocks" (1992, p. 67).

A social semiotic perspective would add that their affordances entail particular potentialities and constraints. The solid, sturdy bricks leant themselves well to representing structures (such as the house in this episode), but the children chose not to use blocks to represent characters in their play, for which they used plastic animals. In this sense, consideration of the chosen combination of materials recognises selection according to aptness of fit, demonstrating that the children showed understanding of material and representational affordances and made purposeful selections to communicate their intended meanings in play.

Unlike the blocks, the plastic minibeasts were clearly intended to represent particular real-world creatures such as flies, bees and snakes in their design, detail and size. However, in their play the children attributed new meanings to them, assigning the bee as "the captain" (2f) and the fly as "the baby" (2g). The choice here seems significant, with the larger, more powerful bee taking

on the role of captain rather than the fly. However, the attributes the children assigned to these characters were more human than animal, locating them in a house, simulating them speaking, and performing actions such as going to sleep and going shopping. The meanings the children attributed to the creatures seem to have come partly from their own real-world experience of families and homes outside of the nursery (sleeping, shopping, babies), and their particular interests and fascinations at the point of construction (captains, batteries, mechanical doors).

The hand-held size and proportions of the minibeasts in relation to the blocks meant they fitted into the enclosures the boys created and could be moved and manipulated around their structures easily as animate characters. It appears that the 'animate-ness' of the creatures enabled them to aptly represent the characters in their play, whilst their 'insect-ness' was of lesser relevance. In this way, the minibeasts were selected from what was to hand for the children and gives a sense of what was criterial for them: small size, moveable and depicting animate creatures as apt qualities for the characters in their play.

Close analysis of the design and operation of Joey's construction reveals play multimodally created through an innovative combination of familiar classroom materials (blocks and toy minibeasts) animated using the embodied modes of speech and action. The symmetrical arrangement of Joey's blocks and the ways he animates them illustrate several purposeful design choices which reveal his interests. He has chosen, for instance, two pairs of blocks at the front of his enclosure where his structure opens, as if to fortify it with a double set of doors (1a). He then stations several model insects on his construction, one precisely on the door 'crack', as if to guard and further protect access to his house (2a). An important feature of a 'house' for Joey in this instance seems therefore to be protection and access, keeping certain characters inside and keeping others out.

Joey uses the idea of a secret opening mechanism, perhaps drawing upon the hidden switches and secret doors found in computer games and adventure stories or the 'open sesame' motif of magical tales. In the action of opening the door Joey vocalises sounds that are reminiscent of hi-tech machines (e.g. "prrring" – 1d, "rrrrrr" – 1l, "pchew" – 1m). These sounds accompany an action of sliding the front blocks apart quickly in symmetry, evoking modern or even space-age automatic doors rather than, for instance, a creaking door of a haunted house or a heavy trapdoor of a castle. As if to reinforce the machine-like design of his construction, Joey develops rules and regularities for its operation, repeating the same opening actions accompanied by similar mechanical sounds multiple times throughout the course of the play. In this way, Joey's embodied action with the resources reiterates that his construction is regular and machine-like, materially echoing the boys' talk about 'batteries' and 'opening all by itself'.

In his choice of materials and in his use of sound and movement, Joey draws upon particular interests and funds of knowledge. From previous discussions with Joey I knew, for instance,

that he enjoyed the film *Star Wars*, and in the week following the observation he came to nursery wearing a *Star Wars* t-shirt. Although this research did not focus on the home literacy practices of the children, it seems plausible to suggest that Joey's design was partly influenced by the machines, robots and space-ships present in the films, books, television programmes and computer games he enjoyed outside of nursery. The importance of children's media cultures are increasingly acknowledged as involving rich and meaningful texts which feature prominently in children's play in multiple modes (Burn, 2011; Plowman, Stephen, & McPake, 2010; Marsh & Bishop, 2014; Stephen & Plowman, 2014). Close analysis of this extract shows how traces of these interests inform not only what children say in their play but more subtle dimensions such as arrangement of objects, actions and sound effects.

A multimodal analysis of design in this block play episode highlights what Joey thought was criterial to houses and complex space-age machines. His construction reveals, for instance, how he considered speed, mechanical noises, symmetrical design and regularities in operation as key features of his structure, emphasising the house's function as permitting and restricting access. Multimodal analysis reveals how he adeptly used and combined a range of the materials and embodied resources from what was 'to hand' to represent and communicate these meanings, which could not have been achieved in a single mode alone. Joey's talk, or the built structure itself, or any other mode considered in isolation would not reveal the significance of the noisy, dynamic multimodal text-making process that he was engaged with, raising consequences for how we observe and give value to children's play as multimodal meaning-making.

Dramatic Co-Construction of Narrative

In addition to designing and creating a structure, this episode demonstrates the potential for block play to simultaneously involve imaginative 'small world' play, highlighting the difficulty of classifying play into distinct types (Hughes, 2006). The dramatic aspect to block play has been likened to stage design, where construction becomes the scene for imaginative play (Gura et al., 1992, p. 34). Similarly, Sawyer highlights the improvisational qualities of children's play, and the creativity that emerges through collaborative exchange (Sawyer, 2016). As children simultaneously take on roles in block play which include set designer, stage manager, playwright and actor, close multimodal analysis can give insights not only into block play as intentional design, but also block play as dramatic and collaboratively constructed narrative expressed in multiple modes. In this way, the 'construction' at work in this extract is not only the physical building of a house with blocks, but also construction of characters in an imaginary scene and co-construction of an unfolding enacted storyline.

The transcribed extracts reveal ways in which the play takes on aspects of a performance, with the children responding to each other's ideas, suggestions and contributions to the narrative.

For instance, in acting out Zack's suggestion that it was night time, Joey responds by turning insects onto their backs as if sleeping. This small action demonstrates how Joey responded by representing what was, for him, criterial to 'night time'; that night time involves sleeping and that sleeping involves lying on one's back. The toy insects therefore become characters whose movement and positioning is important to the imaginative scenario, telling aspects of the story in modes beyond language.

Both Joey and Lizzie use action, sound and manipulation of the objects to add dramatic emphasis to the play storyline. When Lizzie is tasked with pressing the crack and waking everyone up before entering the house, she responds by not only performing a tapping action with her insect, but also accompanying her actions with vocalised sound effects (e.g. "bom bom bom…" – 2d, see also 2i, 2j). As with Joey's mechanical sound effects accompanying his action of opening the door, these sounds serve to exaggerate and further animate the action of knocking and waking up, which were key to the narrative within of the play. These sounds and actions elicit smiles and in-character objections from Joey, and finally a confirmation that, "Now I'm awake" (2j). This illustrates that much of the play storyline is told through a combination of modes, with language playing only a partial role in the narrative that was enacted. In this way, the play episode reiterates a multimodal literacies perspective on expanding our understanding of communicational and representational 'texts' as being not only spoken or written, but also visual, three-dimensional and embodied, as well as combinations of these features which change and developing throughout the course of play (Street, 1984, 1995; Jewitt & Kress, 2003; Pahl, 2008; Flewitt, 2011; Wohlwend, 2011).

A detailed multimodal transcript further reveals how the children subtly developed the play together in their co-construction of an imaginary narrative. After her repeated attempts to enter Joey's house, Lizzie introduces her own new direction to the storyline, showing agency in shaping the play. When her insect character finally gets access through pressing the crack and opening the door, she immediately removes it from the enclosure, making a shocked expression and screaming sound as she quickly moves it out of the space (1g). Lizzie does not accompany this with any kind of talk or explanation, yet aptly introduces a 'surprise ending' to the sequence of play: that after persistently trying to get into the house, her insect character actually wants to leave. They seem to share in the enjoyment of the joke, meeting gazes and laughing (1h). Lizzie repeats this same sequence after eventually being allowed to enter Joey's building in the second extract (2p). These actions communicate to Joey that Lizzie is a player with her own ideas about the play scenario and the characters, with the ability to shape the narrative in new directions which can be mutually shared and enjoyed. It is perhaps partly why Joey is keen to continue the game with Lizzie, in that she reciprocally offers a new dimension to the play that he had not anticipated.

The structure Joey creates in this play episode marks him out as a skilled designer and 'master builder' amongst his peers, who watch the operation of his construction with interest. It attracts the attention of Nicholas (see 2l), who has come from playing nearby to watch Joey opening the door, but Lizzie is the most obviously intrigued by Joey's building. Similar opening-closing themes were revisited in the play of Joey and Zack the following week as they built larger, more elaborate constructions with enclosures for their 'captains', and separate instances where classmate Billy discusses building "an electric house" and Tom and Ciaran spoke of enclosing toy insect "babies". As Gura et al. note, block play among groups of children may not only involve construction, but also participation as "observers, critics, consultants, mathematicians, scientists and co-builders" (1992, p. 61). From observing children observing one another, we can see traces of how play themes, motifs, interests and ideas become shared, revisited and reshaped amongst the group, becoming part of the classroom play culture. In this sense, the objects 'to hand' for the children can become shared signifiers among groups of children in the community of the classroom, highlighting the highly social dimension of the children's sign-making.

Far from straightforward copying, the way shared play themes are re-made and re-shaped demonstrate insights into individual children's particular interests. When Joey has left the game, for instance, Lizzie adapts the idea of doors and rules of entry in her own play invitation to Ellie: "You need to knock on this door". Wulf suggests that mimesis, seeking to emulate or resemble others, is central to children's play and learning (2013). Unlike the notion of straightforward 'copying', mimesis can be a helpful means of considering the ways in which play is co-constructed and the way motifs and themes become adapted, for as Vygotsky notes, "A child's play is not simply a reproduction of what he has experienced, but a creative reworking of the impressions he has acquired" (1967, p. 11). Although similar, Lizzie's choice to replace 'pressing the crack' with 'knocking on the door' perhaps reveals Lizzie's greater interest in recognised and established social procedures for requesting entry (knocking) rather the than hidden switches of adventure game scenarios and futuristic machines. Altering the rules of entry also places Lizzie in an agentive role as the creator and designer of her own house, as Joey had been to her, and a chance for her to switch roles and power relations in terms of the differentiated knowledge of constructions and their opening mechanisms.

Multimodal Rule Negotiation

In his play, Joey is not only designer and architect of his construction, but also engineer and animator, deciding precisely how his creation operates. With such keen interest from other children in his building, he extends the control of his construction to rules about who may enter, how and when. In the episode presented in this case study, this is demonstrated particularly in Joey's interaction with Lizzie, who shows greatest interest in his house and in being able to open and access it. Joey's control moves from an initial demonstration of how his house works,

to a relatively straightforward cause-and-effect instruction for Lizzie to press the crack (Transcript 1), to then introducing increasingly complex conditions for entry (Transcript 2).

One device Joey uses for this rule negotiation is voice pitch. He uses speech to step outside of the play frame and explain his rules to Lizzie in his normal voice (e.g. "There's nobody controlling it, that's why" – 2c). Yet he changes to a lower pitch to act as characters who speak his rules, for instance, "…you have to wake up the baby first" (2g), spoken as the 'captain'. There are further instances where Joey uses his normal voice but lifts up one of the insects, indicating through this action that he is speaking 'as' that character (e.g. holding up one of the 'babies' and saying, "You have to ask the captain" 2f) and uses action alone to answer a question (e.g. Lizzie asks where the captain is, which Joey responds to by holding up the bee – 2g). This reiterates Bateson's suggestion that rules and scenarios are negotiated both by stepping outside of the play frame to talk about the play, and through talk that is within the play frame, in character (Bateson, 1956) and resonates with Goffman's concept of 'footing', where a shift in footing indicates a change in alignment during an interaction (Goffman, 1959, 1986). It further illustrates that this rule-making and framing is not achieved solely through what is said, but multimodally through combinations of means such as speech, gesture and actions with objects.

The use of voice qualities and issuing rules in character can be seen as a device for enacting control as 'gatekeeper' of a construction. Joey makes an announcement to Lizzie that the door is not working because "there's nobody controlling it" as he turns the insects over into a sleeping position (2c). Lizzie can clearly see that Joey *is* the one controlling the construction, but by making such a statement, Joey is denying his actual real-life role, instead establishing a pretence where responsibility for the house and its actions belong to the characters within the play. In this way, he is able to make demands and challenges, issue and alter rules not *as* Joey but *as* 'the captain'. Lizzie responds to these demands by also locating herself as a character in the play, using the insect she is holding to 'press the crack' for her (1b) and speaking in a markedly deeper voice as if taking on a new character identity (2k). Locating rule-making within the narrative of the play therefore seems to enable requests and challenges to be made which might be resisted or ignored if presented outside of the play frame.

The rules of Joey's construction, particularly the idea of pressing the crack to enter, seem particularly appealing to Lizzie, and in this episode she makes five separate attempts to be let into Joey's house. It is perhaps because of her persistence that Joey makes these restrictive rules, but the rules and conditions themselves seem particularly interesting and appealing to Lizzie. When Joey leaves the blocks apart and there is no crack to press, just an unobstructed entrance into the house, Lizzie seems to move her creature in somewhat reluctantly, then waits until the door is back in place before trying to gain access again. In this sense, the play hinges upon collaboration and inter-action between the children. Lizzie wants to understand the rules

and be allowed entry to the house, and Joey needs this drive from Lizzie in order to formulate, enact and adapt the rules of entry. This carries similarities to the chasing game examined in the following chapter; just as a game of chase cannot work without the desire of one to be chased but not caught, neither can this game of opening and closing, being in or out, be achieved without one player seeking access and the other establishing barriers. It seems then, that rather than rules of access existing just to restrict involvement, understanding the rules and enacting the conditions is part of the appeal of the game, and feeling part of a shared narrative which involves belonging and acceptance within a social group.

Whilst control of his construction, and access to it, are clearly important to Joey, the smiling and laughter between the children throughout the interaction show that he is enjoying Lizzie's involvement in the play. Lizzie is by no means completely passive in receiving and following Joey's rules. She challenges Joey's control on several occasions, for instance saying increasingly loudly and with an annoyed tone, "It's not working!" (1c), and stating, "I'll knock you down!", using her insect to knock one of Joey's 'babies' off the block (2e). As with Joey's talk, the fact that she does this 'within' the play (using a different voice and using her insect to knock Joey's), and following it with laughter and a glance at Joey, she is communicating that this is a playful challenge to his authority, within the frame of the game. As with the computer play case study in Chapter Five, it seems that smile and gaze were used as communicational devices to 'check' that their seemingly provocative speech and actions are understood and authorised by the other player, multimodally communicating 'this is play'. In this way, when a challenge was made to a rule in play, Lizzie seems to have been 'checking' with a smile and a glance at Joey, that this was indeed reciprocated as playful (1c, 1h, 2b, 2e). The smiles, laughter and use of gaze and objects seem to show that the rule-making, rule-bending and rule-breaking were part of the fun of the play for both children.

Multimodal analysis unpicks the complex rule negotiation both children were collaboratively part of, and enjoying. It is interesting to note that both Lizzie and Joey have demands made for their attention by other children during this stretch of play. Zack directly requests that Joey pays attention to his own building, asking him, "D'you know how my doors open? My doors open very funny Joey, look", but Joey's gaze shows his attention is on his own construction and play with Lizzie. Lizzie's friend Clara also repeatedly tries to get Lizzie to go outside to play with her which she declines. The fact that both children ignore these requests suggests that they were engaged and motivated in the play they were constructing together, despite not usually choosing one another as play companions. Although this was Joey's construction, and although he was the main controller of its operation and access, Lizzie's involvement invites new collaborative possibilities for developing the rules and dramatic narrative in new directions, with a detailed multimodal analysis revealing how this is subtly co-constructed. The complexity of child-initiated block play is brought into focus by a transcription system which focuses on the

simultaneously spatial and temporal dimensions of this play. The following section reflects upon the particular multimodal transcript design and the insights it offered.

Transcript Design: Comic Strip Layout

Transcribing block play presents numerous challenges as it involves representing three-dimensional objects, and the interactions surrounding their use, over time. Approaches to transcribing block play have included the use of grids with columns for 'language' and 'action', for instance in Cohen and Uhry's Bakhtinian analysis which focused on children's spoken discourse during block play (2007). Such studies, however, position much of the physical act of block play itself as 'paralinguistic' detail given lesser interest and attention, transcribed using written description (see also Corsaro, 1986). Gura et al. (1992) place greater attention on block play structures themselves, depicting children's constructions using diagrammatic line drawings. Whilst this highlights the physical form of the blocks, the drawings focus on the 'finished' structures rather than the process of their construction. As simplified line drawings, they also decontextualise the construction and do not incorporate the child, showing a drawing of the structure abstracted from its physical, social context. In their later work, Cohen and Uhry move towards what they call a multimodal approach, although emphasis is still given to children's naming and descriptions of their block structures (2011). They incorporate photographs of the children's block structures, which add a visual dimension featuring the children themselves and showing aspects of the early years environment where they were constructed. Whilst the photographs give more visual detail and contextual information, as with line drawings the photographs show one moment in the 'life' of the block structure frozen in an image, and do not represent its evolution over time.

With my own study's interest in the multimodal, spatial and temporal dimensions of block play, this called for a transcription format that represented both the physical structures the children were creating and the ways the structures were being reshaped and adapted throughout the play episode. The resulting transcripts can be seen as an attempt to combine the temporal dimensions of a grid or timeline layout (see Chapter Five and Six) foregrounding image.

As the output options for *ELAN* are limited, after repeated re-watching of the video clip the commercial software *ComicLife* was used to create the transcripts included in this chapter (http://plasq.com/apps/comiclife/ios). Whilst not specifically designed for use in research, *ComicLife* is a flexible programme that provides a range of templates and panel layouts designed for creating comics. Photographs can be imported, arranged and edited, and typical comic features such as speech bubbles can be added in an easy-to-use format. Although comics may seem an unconventional form for academic transcription, the software has been used by a number of researchers seeking to represent the visual and temporal aspects of children's play (Plowman & Stephen, 2008; Bailey, 2016). In his study of children's virtual and

physical play of the computer game *Minecraft,* Bailey's *ComicLife* transcripts combine written extracts of children's speech, written description of action, video stills, screen shots and extracts of musical scores in order to richly depict the children's hybrid online/offline play in multiple modes. Whilst not created using *ComicLife*, a similar layout is used by Norris in her transcription of multimodal interaction analysis through the use of multiple sequential video stills overlayed by text and symbols (Norris, 2002).

Using *ComicLife*, I arranged consecutive video stills of the children's block play into a multi-panel comic strip layout. Video stills enabled me to incorporate the children themselves as protagonists in the play episode and give a sense of the physical setting of the play. However, the block structure itself was not clearly visible in every video still and it was difficult to see the ways in which the children were manipulating the small insects alongside the blocks in their play. For this reason, I supplemented each video still with a diagrammatic depiction of the block structure. This helped give clarity and highlight the block structure itself, represented from Joey's own perspective looking down on the blocks.

A comic strip layout enables a dynamic process to be represented through a sequence of static images, since comic conventions prompt the reader to make inferences between spatial layout and the passing of time (McCloud, 1994). As Plowman and Stephen note, "the frame-by-frame process of creating comic strips forces the researcher to identify the key actions and transitions" (2008, p. 560) In this way, choosing which moments from the video recording to represent as stills was an analytic act, supporting close scrutiny of the video and isolating key moments. The video stills are not, therefore, from fixed time intervals nor do they represent the entirety of the recording, but instead present key moments balanced with the need to depict a coherent unfolding of the play episode. The result is a format which highlights the transcript as a mediated representation of events (Rogoff, 2003).

The comic strip's devices for representing voice and action in highly visual forms seem particularly apt for attending to the dramatic unfolding of the play, across time and in multiple modes. In an attempt to depict multimodal dimensions of the block play, arrows were added to show how and when the blocks were moved, annotations were added related to gesture (e.g. tapping) and speech bubbles of different kinds (e.g. jagged edges for the children making 'sound effects) were overlayed on top of the image. In combination, the sequence of images and overlayed text seeks to represent a dynamic multimodal process through a series of static images. Unlike transcription formats such as timelines and grids which may artificially separate out different modes, this format attempts to convey the simultaneity of modes within each frame of the comic strip. The comic strip layout therefore offered particular insights into the dynamic process of block play whilst 'freeze-framing' fleeting moments such as gaze shifts and facial expressions. Small actions such as Joey turning over the insects to depict 'night time' might easily have been overlooked in a traditional linguistic transcript, but the comic strip design is

able to highlight such moments through showing the hand position and symbolising the turning action with arrows (2c). In this way, insights are offered into the block structure's changing design over time and the many modes which were used to sustain and develop the play narrative.

As a device usually used for telling stories, the comic strip transcript layout draws particular attention to the narrative and dramatic dimensions of block play in ways that a single still image or a multimodal grid, for instance, could not. With a clear left-to-right, top-to-bottom reading pathway, the comic strip transcript is a particularly sympathetic form for depicting the unfolding story within the play. The transcript design therefore drew attention to the fact that this was not solely a physical construction but the unfolding of a narrative with characters and plot twists, enacted in multiple modes. Through including not only the block structure but also the children within the frame, attention was drawn to the children's embodied use of smile and gaze, as well as their various uses of voice in order to convey rules within the play frame they had established. The process of multimodal transcription therefore showed that multiple modes were used to negotiate rules between the children, as has been highlighted in the previous chapters.

In this way, the comic strip style transcript featured in this chapter was a means of foregrounding the visual and temporal dimensions of the play and offered particular insights for multimodal analysis. This layout seemed to work particularly because the camera was static, the children remained within same frame and engaged in relatively small-scale movement surrounding the objects. The comic strip design would not have been such an apt format for representing larger scale physical movement through space such as a running game, for instance, as will be considered in the following chapter. An additional shortcoming of this format is that whilst condensing moments into stills can be helpful for representing longer stretches of play, it loses some accuracy in terms of depicting time. Whilst a timeline or grid may represent standard units of time, in the comic strip layout the passage of time is implied between frames meaning the reader will not know, for instance, precisely how long a particular glance lasted.

A significant advantage of the comic strip design is that it draws on a recognised cultural form. The speech bubbles, for instance, are an instantly recognisable device and the reader needs little explanation or instruction as to how they are supposed to read the transcript (unlike the timeline in Chapter Five, for instance, which included a key for this purpose). However, alongside general familiarity with the form of comics, Plowman and Stephen acknowledge that the form may have overtones of 'flippancy' (2008) and so may not be so appropriate for representing more emotional or sensitive areas of research.

The 'readability' and 'sharability' of a comic strip transcript design potentially makes it a particularly valuable format for using with audiences outside of academia, such as practitioners (Plowman & Stephen, 2008). Similarly, the ease of use of *ComicLife*, compared to more

specialist programmes like *ELAN*, is a further advantage for many. This accessibility may mean comic strip transcripts are a particularly apt design for visualising play beyond research, potentially by practitioners and possibly even children themselves.

Discussion

A multimodal social semiotic analysis of block play reveals the shortcomings of research methodologies which prioritise children's ability to name and talk about their structures (see Cohen & Uhry, 2007, 2011), illustrating that there is much more to understand about children's competencies from the *process* of block play than simply the 'finished' product or the way children choose to talk about their constructions. This multimodal analysis also challenges approaches which stress the developmental trajectory of block play in terms of stages and levels in the sophistication of the arrangements of blocks (e.g. Guanella, 1934; Reifel & Greenfield, 1982). Rather, multimodal analysis suggests that the complexity of a construction's design also includes how the designed block structures both serve and construct the storylines of children's imaginative and jointly negotiated play. For instance, Joey's 'house' construction would have received a low grading in terms of the complexity levels developed by Reifel and Greenfield (1982) or Cohen and Uhry (2007), but we can see that the arrangement of the blocks was only a partial aspect of his sign-making process. The talk surrounding his creation is similarly partial. It is through carefully attending to the multimodal interweaving of children's actions, their movement of the blocks, the combination with other objects, their speech and tone, gesture and gaze that the complexity of their meaning-making is better understood.

This calls into question the assumptions of the EYFS, with its strong links to normative developmental notions of play and learning, and its predication to evidence play observations through snapshot observations and questioning children about their creations. Construction may not necessarily follow a straightforward linear development to increasing complexity, but may instead be understood to serve the interests and needs of its makers in particular ways in particular episodes of play. In this instance, there was emphasis on opening and closing of both literal and metaphorical doors; to gain access to the interior of Joey's block construction, and for Lizzie to be permitted into co-construction with Joey in imaginary play. The construction itself appeared to make innovative use of what was to hand, simple in its structure, but rich in its representation of controlled access and rules of operation. As the multimodal analysis highlights, this play was sophisticatedly and subtly drawing upon multiple modes in combination with the resources of the blocks, which ought not be discounted as simplistic or undeveloped. The implication of this analysis points to the need to readdress how to value and understand what children are creating in their play, and the possible intentions behind their choices, rather than viewing play on a developmental scale which emphasises learning outcomes not yet achieved.

A multimodal perspective reveals block play as a process of creative, social text-making, not solely a finished product. In this sense, we might see block play as having as much to tell us about storytelling and imagination as it does about children's understanding of shape, space and measure, and as much about children's personal and social learning (for instance in the children's rule negotiation) as it does about their physical development with construction materials. In this way, a multimodal perspective highlights the interconnectedness of many aspects of learning occurring in play, and underlines the difficult decisions practitioners are tasked with in selecting where observations of play 'fit' in terms of evidencing curriculum areas, aspects and age-ranges in current assessment practices.

A multimodal perspective supported by fine-grained transcription seems to be a means to support closer attention to the *process* of block play, rather than focusing solely on the finished construction. Joey's structure is inherently dynamic and noisy in its design, with rules of operation that change and develop in negotiation with Lizzie, unfolding as a dramatic narrative. A single photograph or conversation with Joey (as is typical in early years assessment) about what he made would be unlikely to reveal the complex design choices that were enacted in the process of constructing and playing. In this way, video-based observation and close attention to construction play as multimodal text design can reveal the multimodal richness of this kind of play. In addition to the insights it affords researchers, we might also consider the potentials of video as a means of observing, documenting, interpreting and valuing the multimodal 'signs of learning' in early years practice.

Chapter Eight

"You gotta get me": Running Play Case Study

This case study examines an instance of children's running play in the nursery's outdoor area. The chapter begins with a brief introduction to physical play in the Early Years Foundation Stage, followed by an outline of the context and a descriptive vignette of the play. A multimodal transcript is used to support detailed analysis of the children's interaction in this play episode to consider ways they shape and organise a running game. Two key aspects are then discussed: the creation and negotiation of rules in-action, and multimodal communication of the message 'truce'. I reflect upon how a map-like transcript design supports these insights, and conclude the chapter with a discussion drawing together the themes of the case study.

Running Play and Learning

Children's physical play is often limited to spaces and times outside of formal teaching and learning, particularly beyond early years education. 'Playtime' or 'break time' in Primary schools and some early years settings, in which children play outdoors at designated times between indoor activities, have tended to separate much child-initiated physical play from learning, positioning it as a means through which children can 'let off steam' or 'burn off energy' in preparation for more sedentary classroom-based activities (Frost, 2010; Tovey, 2007). The Opies' vivid accounts of children's playground games (e.g. Opie, 1993; Opie & Opie, 1959) and recent studies of children's contemporary playground games (Burn, 2011; Marsh & Bishop, 2014; Willett et al., 2013) highlight the richness of children's play cultures and the interpersonal and social complexity of playground activities such as running games. However, physical play remains a neglected aspect of play research (Tannock, 2014) and tends to be viewed in the EYFS primarily in terms of evidencing physical and biological development rather than in relation to communication, social skills and relationships (Standards and Testing Agency, 2016).

'Physical Development' exists as one of the three prime areas of learning and development in the statutory framework for the Early Years Foundation Stage (Department for Education, 2017). The EYFS guidance suggests that children should develop increasingly controlled and coordinated gross and fine motor skills, and manage aspects of their own self-care with increasing independence. The guidance suggests that practitioners should "provide time and space to enjoy energetic play daily" (British Association for Early Childhood Education, 2012, p. 24), with many early years settings choosing to offer 'free-flow' provision enabling flexible access to outdoor play spaces. The increased emphasis on the value of physical, active learning has led to the outdoors being increasingly considered a valuable part of the learning environment, with many early years settings ensuring both indoor and outdoor play

opportunities are simultaneously available (Tovey, 2007). The importance of physical outdoor play has also been brought to the fore in response to growing concerns about child health and obesity, and a perceived 'nature deficit' arising from reduction in time and safe spaces for children's outdoor play (Louv, 2010). In response to such issues, there has been a growing interest in approaches to outdoor education such as the Scandinavian 'Forest Kindergartens', with many UK early years centres making more time and space for outdoor experiences supporting physical play (Lester & Russell, 2010).

Chasing games are mentioned within the EYFS 'Physical Development' guidance, stating that children between 40-60+ months should be able to "[negotiate] space successfully when playing racing and chasing games with other children, adjusting speed or changing direction to avoid obstacles" (British Association for Early Childhood Education, 2012, p. 24). Whilst the EYFS states that "all areas of learning and development are important and inter-connected" (Department for Education, 2017, p. 7), the focus in the area of 'Physical Development' is on progressively complex stages of controlled and coordinated movement. This has resonances with Piaget's formulation of developmental stages of play, as gradually 'progressing' from predominantly sensory-motor play to play that is increasingly rule-governed (1945). By focusing on running play in terms of physical development, for instance the ability to successfully avoid obstacles, the EYFS downplays the role of movement as part of communication and social interaction.

Research into young children's 'rough and tumble' play suggests that highly active physical play, such as chasing and play-fighting, has a particularly important social dimension. Studies of rough and tumble play have found it is often discouraged by practitioners amidst concern for safety and the appropriateness of such play (Jarvis, 2010; Tannock, 2014). However, Smith suggests that children themselves are skilfully attuned to each other's subtle play signals and are able to distinguish play fighting from real aggression more successfully than adults (Smith, 2005). Reed and Brown (2000) propose that rough and tumble play acts as a key site for the expression of care, intimacy and friendship through physical means, "with exchange and mutual consent distinguishing R&T [rough and tumble] from real fighting, aggression or bullying" (Tannock, 2014, p. 256). Pellegrini and Smith (1998) note that rough and tumble play is particularly common among boys, giving rise to the suggestion that it may carry particular importance as a socially acceptable way for boys to express emotional connections with other boys (Freeman & Brown, 2004; Reed & Brown, 2000).

Such a perspective positions rough and tumble play as not only a form of physical activity, but also an important means through which children communicate subtle social messages. Tovey notes that "players have to be able to signal "This is play" (Bateson, 1956) to indicate that the actions are mock combat and not for real" (2007, p. 23). This then calls for consideration of precisely *how* children communicate these signals to ensure the message is understood and

agreed by all players. Recognising such signals might, as Tannock suggests, ensure "early childhood educators will be more readily prepared to incorporate and recognise the value of physically active play displayed by young children in their care" (2014, p. 261). Multimodal transcription and analysis offers a means of considering precisely how this delicate negotiation unfolds in the playing of a chasing game.

An Instance of Running Play in the Nursery

In the site of this study, the Early Years Centre's large outdoor play area was used simultaneously by many children including the two nursery classes and the childcare centre, meaning up to 50 children aged two to four could be playing in this space at one time. For the children in the nursery classes, this space was accessible as part of 'free-flow' provision for the majority of the session, with direct access from the classrooms into the outdoor area in all seasons and all weathers. Staff from the childcare setting, which had a smaller outside area located at the other end of the building, would also bring groups of children to make use of the larger outdoor space and play equipment. This case study focuses on the running games of a group of four-year-old boys from the nursery, including negotiation of their game in an open space that was shared by many.

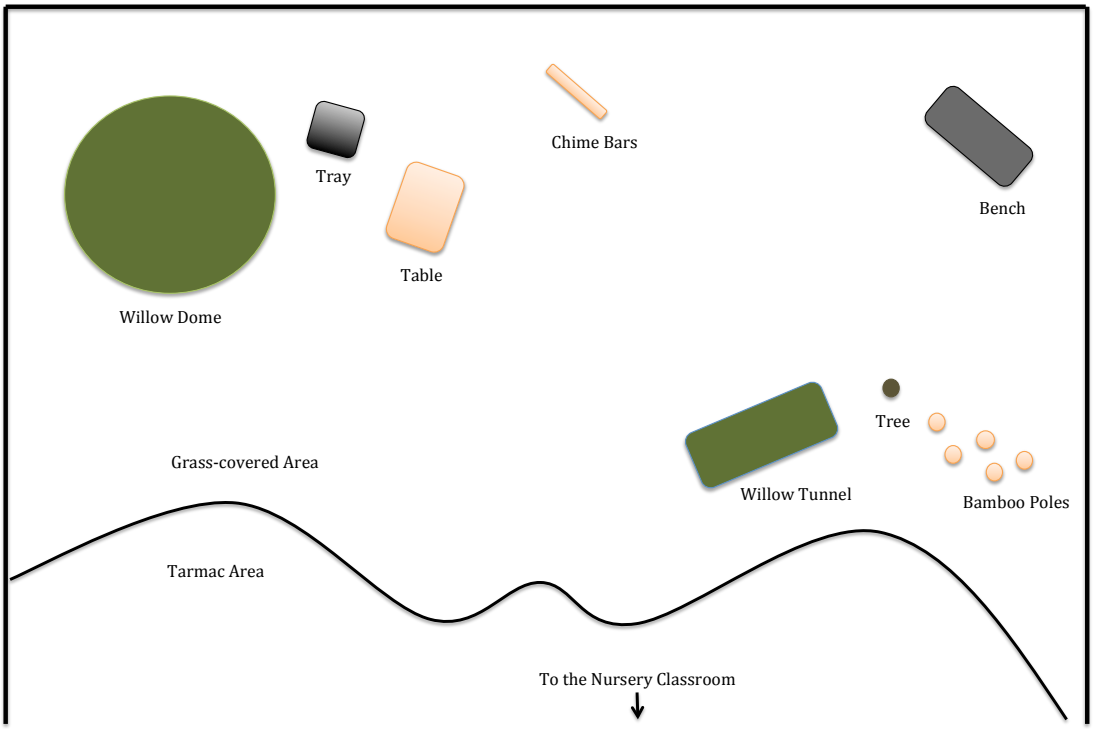


Figure 8.1: The nursery outdoor play space

The instance of physical play took place on the grass-covered area of the outdoor play space, stretching from the tarmac-covered section to the fence at the perimeter (see Figure 8.1). The grassed area included a number of fixed features, such as a willow dome, a large set of musical chimes, a child-sized table and a bench. On the grass closer to the classrooms were a number of tall bamboo poles, a willow tunnel, a small tree and a slightly raised hill area. In the design of the outdoor space, which I had been partly involved with during my time as a teacher at the centre, the emphasis had been on providing features of interest and exploration that were versatile in their potential uses.

Compared to the tarmac-covered area, which was divided by willow fencing and flowerbeds, the grassed area offered a comparatively wider open space and greater room for large-scale movement. This area was often used for adult-led activities that required a lot of space, such as circle rhymes and parachute games, and was where children tended to engage in their self-initiated large-scale play such as ball games and chasing games. Practitioners would often specifically direct children to play highly physical games like chase on the grass rather than the tarmac, fearing that the hard surface would injure the children if they fell. Although in practice this was a rule that the children tended to forget or ignore, running on both the grass and the tarmac, it demonstrates some of the challenges running games raised for practitioners regarding safety. As a nursery teacher myself, I noted similar apprehension about running games during weekly visits to a nearby area of woods that were carried out when I was a class teacher in this setting. In this even larger open woodland space, the accompanying adults (both practitioners and parents) often expressed fears that the children would run away, get lost or get hurt, demonstrating a connection made between large-scale physical play and danger.

During these woodland visits, one practitioner expressed frustration that many children were "just running" and should be directed to more 'focused' activities. During data collection, it was noted that few observations of running play were featured in the children's on-going assessment portfolios, suggesting that in addition to concerns for safety, running play presented challenges in terms of observing and documenting learning. Dismissal of children's loud, fast-paced activity as unfocused, and its absence in assessment documentation suggests that running play was not often thought to support or demonstrate children's learning, particularly beyond the remit of evidencing physical development, and was valued less than other quieter, more sedate forms of play.

A further issue affecting teachers' documentation of highly physical play concerned the practical difficulties of observing and recording running, a challenge that was also experienced as a researcher. The children would run fast and far, often making it difficult to keep up with them, to see and hear them, and to record what was happening. In data collection, positioning the video camera tended to involve a choice between recording close-up and losing much of the large-scale movement around the space, or recording at a distance and inevitably losing detail. With

multiple participants running unpredictably in different directions across a large area, decisions about camera focus and positioning often had to be made quickly and in the moment, deciding whether to track one particular child or pan across the space. These choices inevitably led to gains and losses, highlighting the partiality of all video recording. This reiterates the challenge of video-based data collection as discussed in Chapters Three and Four, but video nonetheless managed to capture crucial aspects of play that other methods, such as fieldnotes and photographs, could not.

As well as posing challenges for practitioners and researchers, running games sometimes seemed to be a source of conflict and tension amongst the children themselves. As a practitioner, it was common to be approached by children who were upset about being chased, or annoyed that other children were not joining in their game. This was complicated by the fact that running away from a 'chaser' when not wanting to play could be easily interpreted as participation in a chasing game. The disputes arising in running games further established it as a somewhat challenging play activity that was not usually given the same attention, by both practitioners and researchers, as play which was more verbal, less physical and on a smaller, quieter scale. For these reasons, it struck me as a particularly interesting form of play to approach from a multimodal social semiotic perspective, taking play of this kind to be a serious form of embodied meaning-making.

The play featured in this chapter unfolded during one sunny afternoon when most of the children in both classrooms had chosen to play outside. The children I observed were playing a version of the well-known playground game variously known as 'tig', 'tag' or 'catch-chase' (Opie & Opie, 1959) a running game involving chasing and catching another person. In a typical version of this game, one person becomes 'it' and has to try and catch another player by tapping them, making them the new 'it'. In this play episode, the children mainly kept their play to the grassed area, running through and around the fixed features such as the willow dome and the bench. Since so many children had chosen to play outside on this day, the outside area was particularly busy, creating challenges for negotiation of a large-scale group game.

The children engaged in the running games were four-year-old boys from the case study class who were well-known to each other and good friends. At points, they also interacted with children from the other nursery class and the childcare setting. George appeared to be the main initiator of much of the running and chasing. George was one of the oldest and tallest children in the class and played with Billy, Ellie's twin brother (see Chapter Five), who particularly enjoyed imaginative play and was often keen to incorporate a narrative element (such as police or superheroes) into play, and Tom, who tended to prefer loud and lively play which could be described as somewhat boisterous. The video recording, and the play itself, was somewhat stop-start, as disputes arose which led to the play stopping and decisions to switch off the camera. However, a collection of clips provides rich insights into the large-scale, outdoor,

movement-based play of a group of children throughout over approximately one hour of the nursery session. An overview of the play episode is presented here as a vignette, before a shorter section of the recording is analysed in close detail supported by a multimodal transcript.

Running Play: Vignette

George, Billy and Tom play a version of a chase-and-catch game which involves fast paced running across the grass, weaving through and around the features of the outdoor area. Initially, Billy and George both seem to be chasing Tom, running through the willow dome as George runs around it, so that both boys close in on Tom on the opposite side. Tom rolls onto the ground as George and Billy tap him on his torso. Billy shouts, "Got you!" and then yells, "Run!" as Tom gets back up on to his feet, with both Billy and George simultaneously turning and running away across the grass. The chase then seems to switch from Billy and George chasing Tom, to Tom chasing Billy and George.

The chase momentarily stops as Billy notices me filming. He stands still, calls my name and waves towards me. Stretching his coat wide behind him, he says, "I'm Batman, Kate!" With his coat still spread out, Billy bends forward, stretching his arms over his head, until he touches the floor. Tom seems not to have noticed that Billy has stopped playing, or sees his distraction as a chance to easily catch him, and taps Billy with some force while he is bent over, his vision blocked by his coat. Tom keeps running, now pursuing George. They run through the willow tunnel and in loops around the grass. Tom calls, "George!" repeatedly as he runs after him, but George shows no signs of slowing or stopping. George shouts behind him, "You gotta catch me if you want to say something". As they chase, Billy calls my name several times, telling me, "Tom just hurt me". As Billy seems somewhat upset, I switch off the camera.

I continue recording moments later when the play has resumed between the same three boys and the dispute seems to have been forgotten. George tells me that they are "playing catch" and begins to run off. Billy says, "But I'm a superhero", and initially remains still. As George runs away from the others, he calls over his shoulder, "Catch me!" and Billy begins to chase him, stretching his coat out wide as before. He pauses to call over his shoulder, "Come on! Come on Tom!" and both boys run after George. After a short chase, they close in on George and tap him as he stumbles to the ground. While George climbs to his feet, they reassign roles, with Billy tapping Tom's chest. Tom runs away through the willow tunnel, the two boys watching until he emerges from the other end of the tunnel, with Billy calling, "There he is!" Tom runs in a loop around the willow dome, with George choosing to run around it in the opposite direction. Running towards each other, and seemingly unsure about who is chasing who, both Tom and George come together with outstretched arms, laughing. Tom exclaims, "Got you!" but George disagrees, "No, you got me, I got you."

Seeming to attempt to re-establish roles, George taps Tom, shouting, “You’re it!”. Billy repeats George’s suggestion to Tom, “You’re it. You are it”, but Tom seems reluctant to chase. Both Billy and Tom walk slowly across the grass towards George, who watches them steadily as they approach. George waits still by the fence until they are about a metre away, then darts off quickly running towards the willow dome. This seems to prompt Billy and Tom back into a chase, with both boys turning and running after George. Meanwhile, a child from the other class has hurt herself and can be heard crying. I turn off the camera to go and see if she needs help.

The following section of the play is the part chosen for detailed multimodal analysis. Tom has left to go and play with another group of children. Billy stands beside the bench, watching George run past him towards the willow tunnel, then back across the grass to the willow dome on the far side. George stops briefly then runs back past Billy again before stopping at the other side of the bench. Facing each other with the bench between them, George says emphatically, “You gotta get me”, which prompts Billy to run at George. Running away, George calls, “Yay!” as Billy chases him in a loop around the bench. As they chase, Joey and Tom dash past and position themselves behind the bench, with Billy glancing towards them as he runs. Looping back in front of the bench, George then slows his running to a walking pace, stretching out his right arm towards Billy and walking in a small circle. Billy also slows his pace and follows George’s change in direction. George lifts his hand to his neck and walks towards the willow tunnel, where both boys stop. Facing each other, Billy says, “Your turn”. With his hand still on his throat, George says, “I’m just going inside for a little drink”. Billy replies, “Me too”, and both boys go together across the play area to their classroom.

When they come back outside, they are joined by Lucas and Toby and continue running in long, winding chases around the grass area. Billy brings outside a mask he made from a piece of cardboard packaging earlier in the day. The running game begins to take on more elements of role play, with Billy roaring from behind his mask and eliciting falsetto screams from the other children as they run away. The running game ceases when Billy wears the mask and roars at Otis, a child who was visiting the outdoor space from the childcare centre and was less well-known to the children of the nursery class. Seemingly worried or threatened by the roaring and the mask, Otis responds by pushing Billy away. The children’s movement then becomes distinctly different as they withdraw to the nearby hill area. Rather than moving in long, twisting paths across the grass, Billy, George and Toby crouch together in similar postures as they watch other children from the hill, only very gradually beginning to make short running excursions together from the hill back towards the willow dome and open grass area.

Analysis

At first sight, running play of this kind might appear somewhat chaotic. The pace is energetic and fast, the volume is loud, and the rules the children apply to their game may seem inconsistent and fleeting. Children easily come and go from the game, sometimes playing as a

large group and sometimes only as a pair. The written vignette struggles to capture fully the noisy, bustling energy of the outdoor play area and the children's rapid, changing movements, their many gaze shifts and their complex use of the space. However, when video is used to look closely at how the children are communicating in play of this kind, and when transcripts are used to examine in detail its multimodal nature, attention is given to the complexity of meaning-making in multiple modes, including those which are dynamic and may be particularly challenging to capture and interpret.

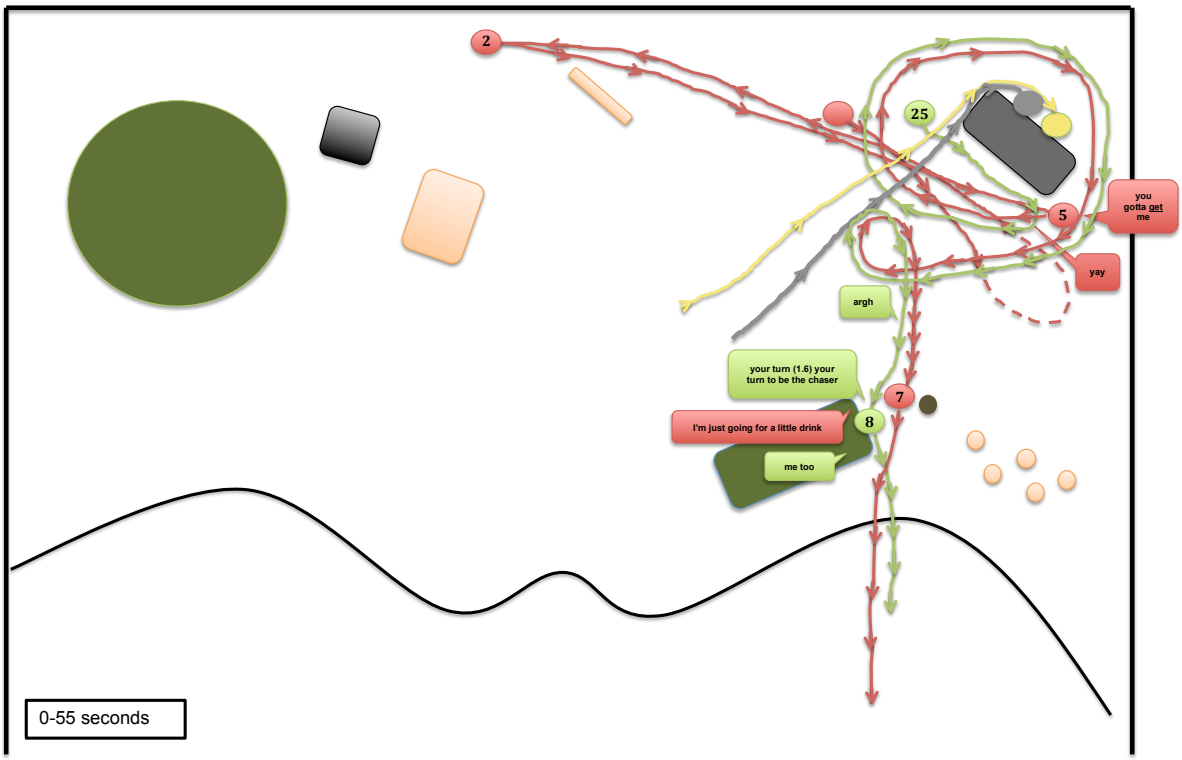


Figure 8.2: Running play overview

The first transcript (see Figure 8.2) represents 55 seconds of the children's running play, during which time George and Billy establish a chase and then end it. Shorter sections of the transcribed extract are presented throughout the analysis to support clarity and enable consideration of the play as it unfolds (see Figure 8.3 and 8.4). The transcripts show a birds-eye view of the grass area with coloured lines depicting the movement of each child (with colours corresponding to the colour of their t-shirts – George: red, Billy: green, Tom: grey, Joey: yellow). The arrows along the lines are positioned at approximate one-second intervals to show when the children were moving slowly (the arrows being closer together) or at speed (the arrows being further apart). What follows is an analysis using the transcripts to examine the multiple modes involved in negotiating this form of play, firstly through an invitation to chase and secondly an instance where play is closed down in 'truce'. The development of the map

transcription format and the insights offered by this particular design are considered, and the chapter concludes with a discussion drawing together these key themes.

Creating Roles and Rules in Action

The play in this episode is distinct from the other three case studies in that it does not centrally involve play with artefacts (e.g. blocks, chairs, toys). The resources the children draw upon most centrally in their running play are embodied modes, such as gesture, gaze and qualities of movement such as speed and direction. On the grass-covered section of the outdoor area where this play took place there were a number of fixed features which seemed to become resources of the play in relation to the children's movement. For instance as structures to be encircled (the willow dome), passageways to run through (the willow tunnel), places to hide behind (the bench) and vantage points (the hill). A further resource Billy makes use of in this episode of play is his clothing, stretching his coat wide as he tells me, "I'm Batman!", presumably to signify a cape or wings. In this way, although it may at first glance look as though the children were playing without resources in the traditional, material sense, a social semiotic perspective prompts us to consider what else is 'to hand' for children's meaning-making in all forms. This includes the features of the space, the children's embodied modes and material resources that are less frequently considered as significant, such as clothes, accrediting children as being creative and agentive in how they make meaning with these in combination.

Unlike the other play episodes, this game takes place in a large, busy, open part of the outdoor area. With the children often at some distance from one another, and with background noise from the wind, the road and other children, speech was typically not the most apt form of communication between players. The space and the social context for communication in this kind of play meant that movement and qualities of movement, such as direction, speed and distance, became particularly central not only to the game's chasing and catching, but also in negotiation of the rules of the play. This analysis considers how the negotiation of play rules and roles unfolds multimodally in a section of the children's chasing game.

As discussed, Figure 8.2 focuses on a 55-second extract in which George encourages Billy to try and catch him, prompting a short chase which George then ends so that he can go inside for a drink. To focus on the unfolding of the play, Figure 8.3 focuses on the first 25 seconds of this play episode. During this time, Billy stands still beside the bench (stillness shown by a circle with the duration of pause, in seconds) as he watches George run across the grass. George first runs past Billy towards the fence beyond the bench (the dotted line depicting him momentarily running out of camera shot) before running back past Billy towards the willow dome, glancing at Billy as he runs past. There, George turns around on the spot and briefly pauses, running back past Billy once more before stopping on the other side of the bench. As George runs, Billy remains still, following George with his gaze and a slight turn of his body.

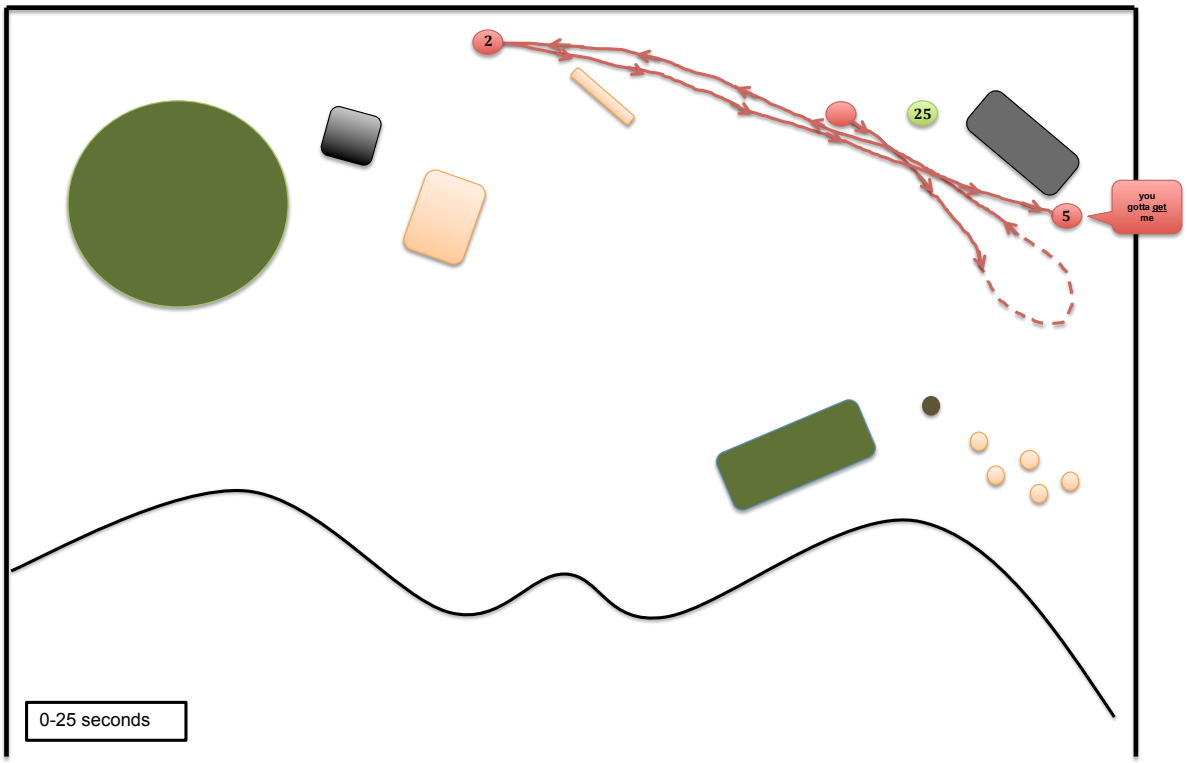


Figure 8.3: Running play first part

The transcript shows that George's running re-traces the same route back and forth in front of Billy. This involved passing Billy at close proximity on three occasions, effectively offering Billy three easy opportunities to move only a short distance to catch him. George's running in this phase of the play seems to be an invitation, formed in repeated back-and-forth running paths and close proximity to Billy, communicating a message somewhat like 'Come and get me' or 'Catch me if you can'. As he runs, George looks at Billy, with Billy returning that gaze as he tracks George's movement, with the gaze exchange seeming to reinforce the sense of invitation. In addition to communicating an invitation to play, George simultaneously establishes their roles in the game, conveying his own role as the running escapee and encouraging Billy to enter into the catching role of the chaser. If George had wanted to avoid being caught by Billy altogether, he could have hidden or kept a much greater distance between them, but this runs the risk that Billy might think he was leaving the play or feel that the task of catching George was too difficult. If George's main objective was to be caught, he could have stayed stationary near to Billy to enable an easy catch, but this would undermine the premise of a game of chase. His running at close proximity strikes a balance between making the catch achievable for Billy and communicating the rules and principles of a game that hinged on chasing and escaping, making the game challenging and exciting. What may first appear as merely running, when considered in this way, can be seen as a layering of complex communicational messages,

establishing roles ('You are the chaser, I am the escaper') and rules ('You should try and catch me, but I'm going to try not to get caught').

In the transcribed episode, Billy does not immediately take up George's invitation to try and catch him, remaining still as he watches George run past. After his third run past, George stops at the other side of the bench, facing Billy, and says emphatically what he seems to have been attempting to convey in his movements – "You gotta get me". This authoritative instruction, particularly the directive "you gotta" and emphatic "get", serves to clearly emphasise his suggested role for Billy. Whatever the reason for Billy's initial reluctance to chase (perhaps tiredness, being unsure about what role he was being expected to take on, preference for being the escapee, or more of an interest in playing as Batman), George's verbal instruction is successful in getting Billy to chase him.

In this instance, talking through their roles required coming to a standstill, disrupting the running element so central to the game, and being at dangerously close proximity to one another within a chase. In this sense, it seems that embodied modes were the first choice for constructing a message within the play itself, and that stopping to discuss their roles was something of an amplification or clarification when the invitation was not taken up. Similar movement patterns were used to initiate a chase on several occasions in the longer episode of running play between the group of boys. When there seemed to have been confusion surrounding roles, or the play had slowed to a standstill, it was often regenerated by one of the children suddenly darting off in another direction, or a player remaining still until the chasers were close, then moving abruptly away. Such embodied 'invitations', including the episode transcribed in this chapter, seemed to play upon a contrast between stillness, action and quick changes in direction, generating a sudden shock or surprise that often enticed the children into a chase. The following extract further demonstrates how rules and roles within the play were negotiated through complex multimodal orchestrations where language was not used as the sole or primary carrier of meaning.

Multimodal Communication of the Message 'Truce'

Figure 8.4 shows the second section of this extract, in which the boys chase around the bench before stopping their play. George makes his spoken command, "You gotta get me" while standing on the opposite side of the bench to Billy. Whilst the children verbally negotiate the chase, their careful positioning demonstrates the on-going significance of their embodied placement in space. The bench acts as something of a base, where Billy stations himself, and also as a barrier between the boys, establishing a safe distance which is close enough to easily talk and be heard, but far enough apart that they do not risk getting caught too easily if a chase does begin. The bench continues to act as an obstacle of sorts as the chase unfolds, with George running in a clockwise loop around it, pursued by Billy. Indicating his satisfaction with

the chase that then begins, George says through breathless laughter, “Yay!” as he runs away. Billy follows the same path made by George in his running, matching his increased speed close behind. As they chase, Joey and Tom run towards and behind the bench, seemingly playing their own running game involving hiding. As they enter the space being used for the chase, both Billy and George briefly acknowledge Joey and Tom’s presence with a glance in their direction.

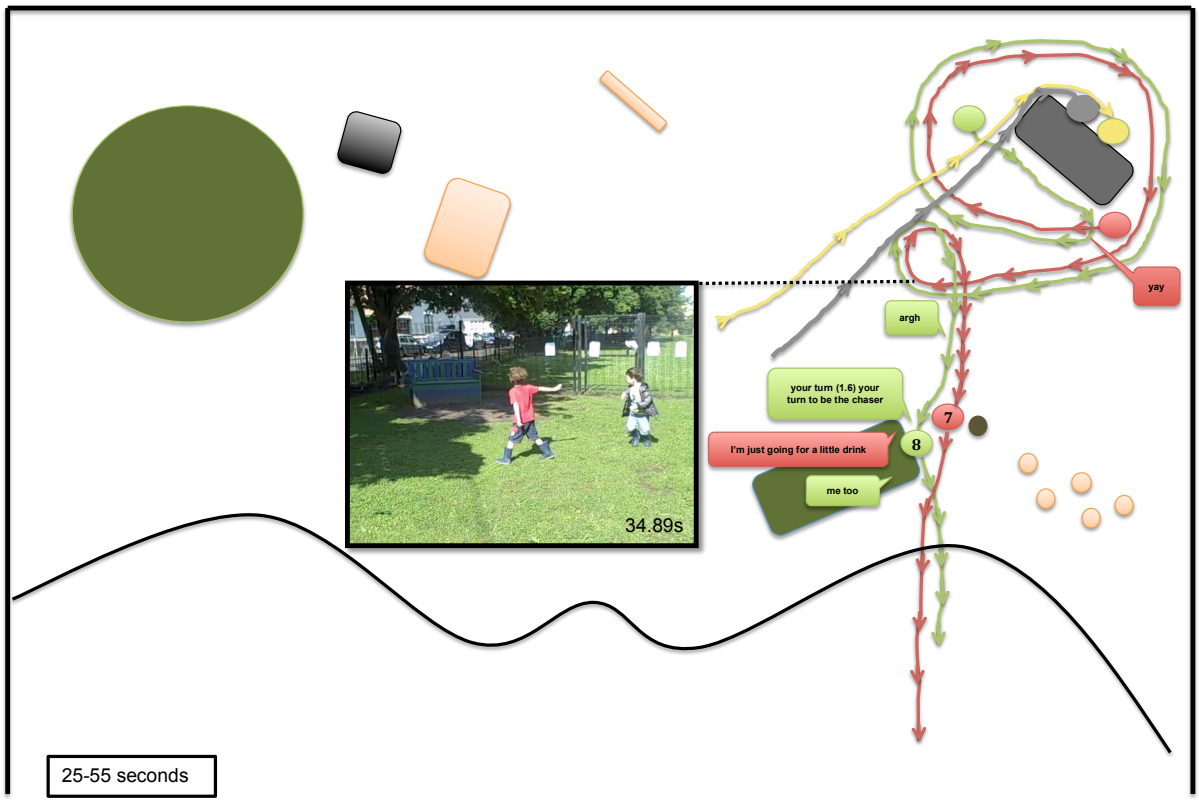


Figure 8.4: Running play second part

Having encircled the bench pursued by Billy, George runs in a small clockwise loop, somewhat mirroring the larger loop previously made around the bench. As he makes this tight circular change in direction, he stretches out his right arm towards Billy who follows the same looping pathway (see video still within Figure 8.4). George’s pace slows, and he keeps his arm outstretched as he paces round in this circular direction before steadily walking towards the willow tunnel. Billy follows him, matching George’s movement and slower pace. Standing face-to-face at the willow, Billy suggests, “Your turn… Your turn to be the chaser”, implying that he thinks they have come together to assign roles as before. However, with his hand on his throat George explains, “I’m just going for a little drink”. Billy says, “Me too”, and accompanies George going into the classroom for a drink.

It seems curious that after George’s persistent efforts to get Billy to chase him, he then closes down the game after such a short chase. It appears possible that Joey and Tom, although

friends, were seen as a disruption to the game, perhaps because of their presence close to the bench 'base' they had been using, or because it was feared they were running towards them to catch them. It may be that, as George says, he realised he was thirsty and tired from running and simply wanted a drink and a rest. Whatever the reason for stopping, the map-like transcript enables consideration of the way in which the play is efficiently stopped by George following their chase. Before a reason for stopping is articulated verbally, this 'closing down' is accomplished through George's subtle combination of movements, including decreasing his speed, changing direction and keeping Billy at a distance through an outstretched arm gesture. Billy mirrors these qualities in his own movement, following George's circular direction and slowing down, and does not attempt to 'catch' George even though this would have been possible at slower speed and closer proximity. Therefore the play is metaphorically and physically 'wound up' by George before they discuss the reason for stopping, which ensures George avoids being caught and avoids surrendering.

In this way, the chase is paused and suspended, subtly communicating the message 'truce' through multiple embodied modes and the children's use of the space. From their observations in playgrounds, Opie and Opie note the important function of truce terms in physical play:

> If, when engaged in some boisterous activity with his fellows, a child is exhausted or out of breath, or cuts himself, or has a shoelace undone, or fears his clothes are getting torn, or wants to know if it is time to go home, he makes a sign with his hands, and calls out a word which brings him immediate but temporary relief from the strife (1959, p. 142).

Opie and Opie propose that although such a term has no easy equivalent in adult speech, it is "perhaps the most important word in the schoolchild's vocabulary" (1959, p. 141), enabling temporary respite from a game without necessarily surrendering. Opie and Opie document a wide range of such truce terms (including 'barley', 'exes', 'keys' and 'skinch', depending on regional variations) and note that the word is often combined with a gesture such as crossed fingers. The analysis of this play episode suggests that in his outstretched arm and circular movement, George designs his own sign for 'truce', achieving the same function as a verbal truce term. Whilst standardised words and gestures were not used, the same message is efficiently conveyed, shaped by the particular context of the play and the experiences of the players. In this way, detailed attention to physical play as a social and communicative multimodal act identifies how sophisticated and vital aspects of the play, such as 'truce', are negotiated in subtle multimodal ways that may be easily overlooked. The transcript gives clarity to an episode of play that may at first appear fast-paced and chaotic, and shows that the children have subtle and sensitive awareness of each other's multimodal communication. Language is most certainly partial, particularly in play of this kind which is so highly physical and conducted in a noisy, busy, dynamic space where speech is not often a particularly efficient means of communicating with several players at a distance.

Transcript Design: Map Layout

The process of transcription, and the particular choices made in transcript design, informed the analysis of this episode as a complex, dynamic multimodal form of play. Consideration of the temporal, spatial dimensions so central to their game first required repeated re-viewing of the video recordings. The video of the children's play was initially re-viewed and annotated using the software *ELAN*, with tiers on a timeline to annotate both Billy and George's running movement, gesture, gaze, facial expressions and vocalisations. Transcribing their running in this way was a challenge, particularly trying to find linguistic terms that described precisely the various features of their movement, including distance, direction and speed. The written vignette featured in this chapter faced similar challenges, attempting to provide an overview of the unfolding play but encountering particular difficulty in clearly and concisely describing qualities of movement. When we are interested in the precise detail of movement as a mode central to the play, a description such as 'George runs quickly to the side of the bench' raises a number of significant further questions, such as 'How quickly?' 'How far?' 'Which side?' 'In which direction?' and does not easily address how these movements occurred in combination with other modes. Therefore, whilst the *ELAN* timeline transcript supported close attention to the play episode in question, and the vignette offers a summary of the overall scene, they are both limited in their scope for examining and representing children's placement in space.

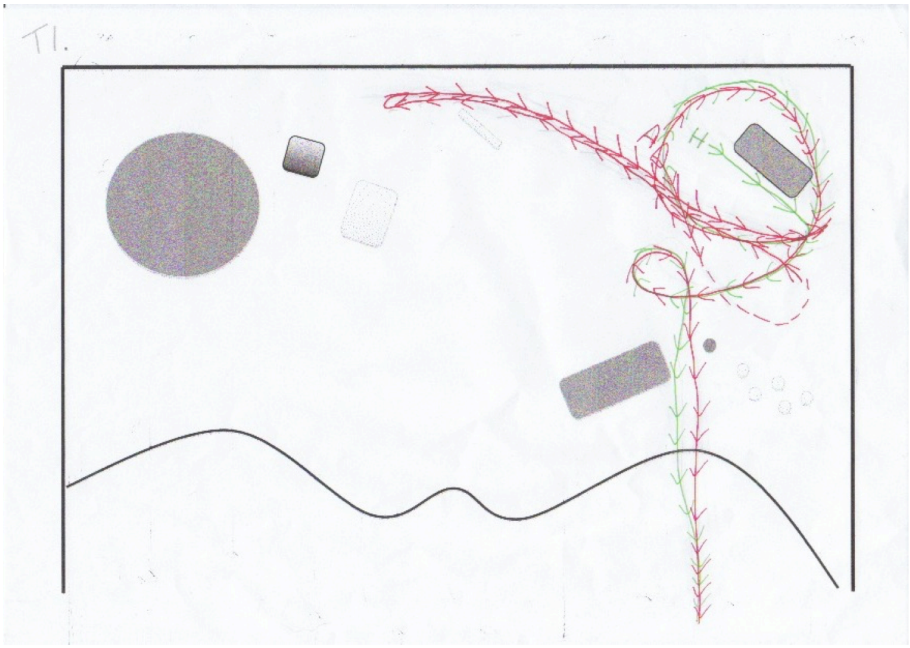


Figure 8.5: First running game sketch

In an attempt to address this challenge, I experimented with mapping the children's movements. I began by creating a simplified birds-eye plan of the outdoor play space, including the perimeter fence and the main fixed features of the space such as the bench. Created in Microsoft Publisher, I was then able to use this as a base plan for mapping movement on top. Initially, I did this sketching by hand, enabling a flexibility and immediacy to the transcription process

which creating a digital transcript does not always offer (see Figure 8.5). Drawing these maps by hand also enabled creation of a 'draft' transcript to consider the suitability of such a design before investing time in creating a more detailed digital version. This mapping was created through re-viewing the video in *ELAN* at slow speed, supporting me to sketch the children's approximate pathways around the space during a short section of their play (see Hackett, 2014).

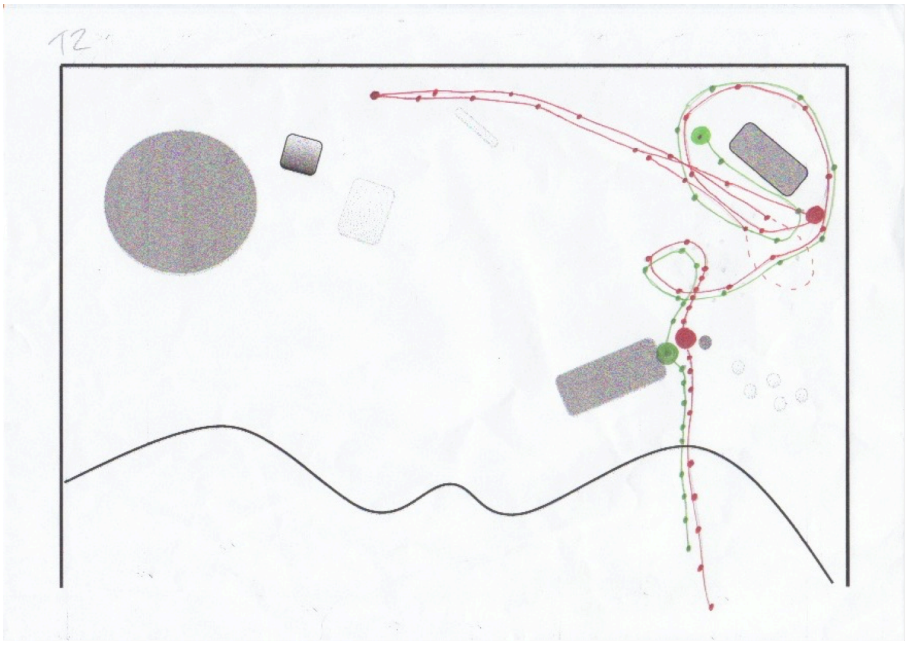


Figure 8.6: Second running game sketch

The children's running paths seemed to frequently cover the same ground, resulting in mapped lines layered on top of each other. This was an interesting discovery, but presented difficulty in clearly interpreting and sharing the transcripts. To attempt to make this clearer, I used different colours for the different participants and added arrows to show directionality. This process highlighted patterns in the movement, namely that the children often ran particular 'paths' back and forth multiple times, and followed each other's paths in the same direction. I noted, however, that simply mapping the paths the children took did not capture the speed of their movement, so in my second hand-sketched transcript I incorporated a system which marked with dots the children's positioning at one-second intervals (see Figure 8.6). This process was assisted using *ELAN*'s ability to 'jump' through the video recording second by second, noting the positioning of the children at each point. In the final version of the transcript, the arrows along the paths act as these speed markers, combining functions to show both direction and speed. As stillness was of as much significance as action, pauses were also incorporated into the transcript design using a circle with a number denoting the duration in time (in seconds) that the children were still. Their talk was incorporated by locating this at the relevant point along their movement 'path', using the convention of speech bubbles in different colours, showing who was speaking and when. The transcript makes particular use of visual modes such as colour, shape,

layout and image to re-present the detail and complexity of the children's running play, whilst attempting to remain clear and coherent to the reader.

A number of insights were supported by this transcription and its foregrounding of the children's placement in space. The transcript design drew particular attention to George's striking movement in a circular direction accompanied by decreasing speed, which Billy mirrors just before the play ends. This pattern was not immediately evident when viewed from camera-level but became visible when re-presenting the movement as if looking from above. Taking this to be a particularly significant 'rich point' in which the children are communicating about the rules of the play, the final transcript incorporates a video still from this moment to support scrutiny of other modes working in combination. The video still makes visible in the transcript George's strong outstretched arm gesture and the boys' gaze directions at this moment. In combination, the video still, the speech bubbles and the mapped running represent and examine a moment that was considered particularly relevant to the negotiation of the play.

Whilst the map transcript design seems to be a particularly apt means for representing the direction and speed of the children's running play around their play space, it inevitably has certain limitations. Due to the clarity that is lost when paths map on top of each other, this design is best suited to transcribing short sections of video. An approach that may help this clarity, as used in this chapter, is to show the mapped transcript broken down into shorter sections to examine particular stages in an interaction and to discuss the episode unfolding.

A further challenge of the map transcript is how to deal with sequentiality. Time is represented in terms of the children's speed, but it is more difficult to depict, for instance, the matter of who is chasing who and the distance between them at certain points in time. In future developments in transcription, this challenge might be addressed through creating dynamic transcripts, for instance an animated map, which could show the children's movements around a space in real-time (see Chapter Ten). Whilst mapping movement using widely available tools such as Microsoft Publisher is fairly straightforward, animation of transcripts is likely to be out of most researchers' capacity until accessible software is developed to support such formats. It is also worth considering the formats conventionally used for academic reporting of findings, which typically follow the conventions of static, print-based media.

A further potential direction for the transcription of movement is the incorporation of data from global positioning systems (GPS). GPS devices use signals from satellites to record positions on the ground with an accuracy of a few metres. Such devices, when worn or carried by participants, enable automatic generation of map-like routes the participant has taken. Such an approach has been used in a mixed-methods approach to data collection investigating children's learning outside the classroom (Sakr, Jewitt, & Price, 2016) but not yet, it seems, to analyse young children's play. One current limitation may be that GPS systems are most

effective for tracking movement on a larger scale, for instance around cities and parks (Lachowycz, Jones, Page, Wheeler, & Cooper, 2012), rather than smaller-scale movement such as children's movement in a nursery playground. The devices are also currently unable to transmit signals from within buildings, which limits their use to study of movement outdoors. Whether generated through tracking systems or manually through reviewing video, maps can be an insightful form of transcription for representing and examining children's movement in space over time (see Hackett, 2014). The act of mapping can draw particular attention to patterns in movement that might not at first be apparent from a camera-level view and offer a valuable means of incorporating qualities such as direction, speed and distance, enabling consideration of an often-overlooked form of children's play.

Discussion

Research into children's 'rough and tumble' play, including chasing games, has started to draw attention to the social and communicative dimensions of this highly physical activity. Whilst studies acknowledge the complexity and subtlety necessary to establish the message 'This is play', much of the research in this area reinforces a developmental perspective in which physicality is seen as a precursor for verbally-negotiated rule-based play. Blurton-Jones (1967) and Pellegrini (1989) describe a rough and tumble to rule-based play 'transition', with Jarvis suggesting that rough and tumble play acts as "the platform from which to build games with rules" (2010, p. 69) and subsequently the foundation for rule-making in later life. Such a perspective implies a Piagetian trajectory of development, seeming to suggest that physical modes give way to verbal modes in terms of more sophisticated negotiation. However, seeing physical play merely as preparation for later learning fails to recognise its complexity in its own right and overlooks the fact that physical action remains through adult life, in many different and always meaningful ways.

A developmental perspective on physical play downplays the possibility of embodied modes being central to the negotiation of rules, and the continuing significance of embodied modes in combination with language and other modes. Such a perspective risks glossing complex multimodal communication as 'non-verbal' or dismissing it as 'pre-verbal', failing to recognise the ways in which multiple modes continue to be central to negotiation and communication in play. A developmental perspective on physical play features strongly within the EYFS (Department for Education, 2017; Standards and Testing Agency, 2016), highlighting a typical progression of physical skills increasing in difficulty and complexity. An emphasis on running games as evidence of physical development, or as beneficial for health and for spending time in nature, risks overlooking the importance of physical play in early years education as a means through which children make and communicate meanings. The multimodal social semiotic analysis outlined in this chapter challenges such a stance, suggesting that close and detailed

attention to the multimodal resources children use to negotiate a chasing game reveals subtle but complex and sophisticated multimodal communication.

In the episode featured in this chapter, the chasing play takes place in a large and busy shared outdoor area, meaning that other children regularly moved into and out of the space used for the game (for instance, Joey and Tom running behind the bench in Figure 8.4). As outlined in the vignette, children also came and went from participation in the game itself, with sometimes as few as two children playing but at other times up to five children involved. Whilst the children are playing a version of the chasing game 'tig', the rules and roles of their game are not entirely typical or regular. There are moments, for instance, when two children take on the chaser role and attempt to catch one person together, and occasions where children both seem to be trying to catch each other. There are also moments where the children elect themselves to be 'it' mid-game and when the children switch whose turn it is to chase before anyone has been caught. In this way, it seems that the rules of the game are not fixed or standardised, but are shaped between the children as the game unfolds.

Given the openness of the space, the presence of many children and the changing number of children participating in the play, on-going negotiation of rules and roles seems a necessity. As children join, leave and play different games alongside them, the rules of the game require flexible adaptation and reinvention in on-going agreement between the players. It therefore seems inaccurate to see this play as an undeveloped precursor to standardised rule-based play, or as random or idiosyncratic. Rather than positioning the children's play as being in deficit, as not yet being developmentally ready or able to follow the 'proper' rules of a game, multimodal analysis considers how play becomes shaped in a flexible, provisional way in response to the context. Such a perspective suggests that the children's play involved careful decisions and subtle multimodal signals to create a game that invented, communicated and negotiated its rules moment by moment.

The analysis in this chapter reiterates Burn's observation that whilst children are adept at finding material resources for their play, "one of their most important and abiding resources is their own body" (2011, p. 22). This perspective supports recognition of the embodied modes children draw upon so readily in all play, and particularly in highly physical play such as chasing games, and how they are used to communicate. It supports what Hackett suggests is a growing understanding "of the whole body as a resource for both discovery and communication" and meaning-making (2014, p. 22). In this playground space, and in highly active play of this kind, it seemed that negotiating through talk was somewhat disruptive to the play itself, requiring a coming-together at a distance conducive to speaking and being heard in a loud and busy environment. For the most part, the children instead used qualities *of* their movement to communicate the rules *about* their movement-based play. Invitations to chase, assignation of roles and the message 'truce' were communicated through multimodal means. This multimodal

social semiotic perspective suggests that children's running games ought to be recognised as sophisticated embodied play texts that are skilfully and responsively designed and re-designed in action.

Beginning to see running games as dynamic multimodal texts challenges some common conceptions of running play in the early years. Highly physical play is often viewed as problematic by adults and so discouraged (Freeman & Brown, 2004; Tannock, 2014). Reflecting upon the practitioner comment that children were "just running", and the relative absence of running play observations in the children's learning journeys, it seems that the challenges presented by physical play may mean it is less likely to be considered as learning than other play activities, and more likely to be considered narrowly in non-specific terms of physical development. The kind of play outlined in this chapter, with participants and rules continually changing in a noisy, fast-paced way, therefore risks being disregarded or interpreted as unproductive and lacking in focus. 'Focus' is a challenging notion, often seen as a desirable trait to promote in early childhood education in preparation for later learning (Department for Education, 2017). Multimodal analysis of this play episode suggests that the children *were* highly focused, giving careful and committed attention to the play signals of one another and continually responding to the changing social context. In her study of children's movement in a museum, Hackett states that "walking and running must not be dismissed as the 'noise' that happens in between focused engagement and learning in a museum (or any other environment), but as a central aspect" (2014, p. 20). Such a perspective also suggests that despite not having a tangible end 'product', physical play should not be dismissed as unproductive. Whilst it may not involve use of material resources that can be easily 'captured' as lasting products of the play, such as block constructions or mark-making, running play can be considered as dynamic multimodal text-making, where texts unfold in time and space. Admittedly, such texts are perhaps harder to capture, requiring sensitivity and considering new tools for documentation, but the children's movement can be seen as worthy of careful attention and recognition. A consequence of this analysis is to ensure that certain modes, or combinations of modes, are not dismissed or overlooked in favour of others, and that observers are attuned to multimodal communication in play in all forms and develop the necessary means of observing and documenting these.

Highly physical play such as chasing games undoubtedly present particular challenges in terms of observation. In the preface to her descriptive accounts of children's games, Opie reflects that "at first the playground seemed uncontrolled confusion", and only gradually did she come to understand the activity as many different games played simultaneously in intersecting and intermingled ways (1993, p. 2). How to capture and interpret such fast-paced, fleeting and dynamic texts presents a particular challenge to both researchers and practitioners, potentially creating a barrier to how physical play is recognised and valued. Video offers a tool for recording multimodal aspects of such play and enabling multiple re-viewings to support

interpretation, but a further challenge is presented in transcription of such video recordings. Written descriptions, such as vignettes, can be evocative but tend to prioritise children's language and fail to represent changing placement in space over time. The addition of photographs or video stills, even when presented as a series, may fragment the players' movement and may struggle to represent the wider context of the play. Incorporating mapping into transcription of running games enables emphasis on children's movement through space. This different re-presentation, and the act of mapping itself, draws attention to patterns and points of interest in the mapped representation, enabling scrutiny of movement and use of space as a crucial aspect of multimodal communication and negotiation in play.

To dismiss running play as unfocused or unproductive, or to see it primarily in terms of physical developmental milestones and a precursor to later play fails to recognise children's skilful use of multimodal communication to negotiate complex social interactions, to respond to changing social circumstances and to establish and agree rules of play. A shift towards a multimodal social semiotic perspective on running play, supported by map-like multimodal transcript design, reshapes how we conceptualise and interpret play of this kind. It supports the observer to look beyond the fast-paced, fleeting nature of such play and to consider the ways young children are subtly communicating and negotiating signals and messages. Such attention is rewarded with insights into embodied, enacted play texts shaped on-the-go and in-the-moment, formed through subtle multimodal design and redesign.

Chapter Nine: Discussion

In many ways, the four episodes of play featured in the preceding case studies are unexceptional. They represent the kinds of activity that routinely occur amongst three- and four-year-olds in early years settings every day. Although such activity may be typical, to overlook or dismiss it as unimportant seems to do children a great disservice. The fine-grained analysis central to this study reveals that each moment of play comprises rich and complex multimodal semiotic work, revealing children to be ceaselessly communicating signs of knowing and learning, creatively and with agency. This discussion suggests that viewing play in this way, and giving it respectful committed attention, can offer valuable insights into children's many forms of meaning-making and their theories about the world, but that this is dependent on developing apt methodological tools which support such recognition.

The study's key findings can be summarised as follows:

- The children demonstrated semiotic resourcefulness in their play, using unconventional and unexpected resources not typically anticipated in early years education.
- The children readily combined and moved between multiple modes, demonstrating transformative engagement that offered insights into their meaning-making.
- The children demonstrated agency and creativity in their play.
- The play involved complex, multi-layered signs in which messages about the play were expressed multimodally.
- Transcript design shapes what becomes recognised and considered significant in children's play.
- Multimodal transcription has the potential to illuminate aspects of play which may otherwise be overlooked or taken for granted.

This chapter expands these key findings by making connections between this present study and the existing literature, spanning both the substantive and methodological foci of the research. The research questions guiding the study were as follows:

- How might multimodal social semiotic theory offer new ways of seeing and understanding child-initiated play?
- How might video and multimodal transcription offer new ways of seeing and understanding child-initiated play?

The first section of this chapter responds to the substantive research question by identifying cross-cutting themes from the four preceding case study chapters. Reflecting on the process of multimodal transcription and the transcripts accompanying the case studies, the second section critically considers transcription as transduction, entailing inevitable choices regarding design,

with consequences for what becomes recognised as meaningful. The significance of such a perspective on child-initiated play and consequences for transcription are considered in the following chapter, where conclusions and implications are proposed for both researchers and educators.

The Multimodal Complexity of Young Children's Play

Whilst the four case studies included in this research feature different types of play, taking place in different parts of the Nursery, amongst different groups of children making use of different resources and materials, there are nonetheless common threads running through the analysis which can be drawn together for discussion. These are identified as:

- semiotic resourcefulness
- transformative engagement
- agency and interest
- multimodal framing

These four cross-cutting themes are considered here in turn, addressing the study's first research question regarding the insights into child-initiated play offered by a multimodal social semiotic perspective.

Semiotic Resourcefulness

A central finding across all four case studies was the children's resourcefulness as they readily drew on what was available to make signs in their play. In several instances, these were resources 'pre-designed' specifically for teaching and learning which were purposefully provided as part of the classroom pedagogy (e.g. wooden blocks, model insects). However, the children also drew upon less predictable resources which were nonetheless part of the nursery environment, such as chairs, a window ledge, leaves and branches, demonstrating their "ever-searching eye" for resources for meaning-making, beyond those which adults might see, expect or plan for (Kress, 1997, p. 104). The children used not only tangible material resources, but also their own embodied resources (see Hancock & Gillen, 2007). For example, they gestured the action of fastening a seatbelt, added sound effects to the action of opening an imaginary door, smiled and glanced at one another to convey alliances, and used different voices to enact characters. In instances such as the running game embodied resources (including qualities of the children's movement such as speed, direction and distance) were particularly central to the organisation of the play.

In addition to tangible and embodied resources, the children also used virtual on-screen resources readily in their play, although not in the ways that might be typically anticipated. Ellie

and Toby's use of the digital 'rubbish' from the *2Simple* computer game as props in their pretend play scenario created a hybrid of on-screen and off-screen play, suggesting that the children recognised digital media as presenting new possibilities for multimodal meaning-making, readily incorporating these into their play alongside other resources. This supports the suggestion of Brooker and Siraj-Blatchford that manipulation of symbols and images on computer screens represents "a new form of symbolic play" in which children seem to treat the on-screen items as 'concretely' as they do physical items (2002, p. 269)

The findings revealed that a multitude of visual, aural, embodied, tangible and virtual resources were drawn upon and readily combined by the children in purposeful, inventive and highly multimodal ways. Far beyond the traditional 'educational' resources often provided for teaching and learning in early years education, this study reveals the resourcefulness children demonstrate in selecting and combining 'what is to hand' in the widest sense, and moving between these forms ceaselessly (Kress, 1997). A particular characteristic of the children's play was the fluidity and ease with which they moved between and across modes. Joey's 'house' involved careful symmetrical spatial arrangement of blocks, animated by mechanical actions and sound effects, and involving the precise arrangement and movement of carefully selected toy figures. Similarly, the boys' 'aeroplane' in the bushes involved precise positioning of chairs, seated postures, engine-like sound effects, steering-type gestures and discussions about seatbelts, all within a few seconds of play.

In choosing from the many available resources, the children made purposeful selections and demonstrated a precise awareness of design. For instance, in the bushes a straight protruding branch at arm-height was used as an apt signifier for a control mechanism in an imagined aeroplane, and a handful of leaves were used as an apt signifier for food for the journey. In each case, the qualities and affordances of the resource were apt metaphors for that which they were signifying (a strong, rigid branch as being 'like' a lever; a handful of organic matter as being 'like' food), demonstrating principled choice of materials in their sign-making. Furthermore, the children distributed meaning across available modes. For instance, the sound effects Lucas and Max used in the bushes to emulate revving engines, or the noises Joey used to accompany the opening of his house's door, conveyed meanings which could not be represented in other modes, such as speech or action. Far from being arbitrary, the children's choice of resources were revealed to be exploiting the distinct potentialities of the materials and modes available and showed a precise sense of design.

Within such complex sign-making, the children also demonstrated sensitivity to their social environment. Ben and Jake carefully found ways to be close together and accommodate each other in their 'house', and the four boys in the bushes jointly enacted different aspects of a pretend aeroplane scenario. The play was open-ended and collaborative, requiring the children to make negotiations about the organisation on a moment-by-moment basis. The case studies

reinforce the suggestion that play can be likened to improvisation (DeZutter, 2007; Sawyer, 2016). In this way, play can be considered multimodal social meaning-making, and through its playfulness, it seemed to support the players to explore the flexibility of resources and to develop an awareness of their capacities as social sign-makers.

These case studies therefore reveal that play can be considered complex social semiotic work, demonstrating resourceful and principled design made in-the-moment in response to ever-changing social situations. Crucially, this research emphasises that children's semiotic work involves resourcefulness beyond that which educators might typically expect or plan for. Far beyond the resources designed for sign-making which were available in the nursery (e.g. pens, crayons, paper, chalk), or traditionally 'educational' resources, the children made signs from a wide and varied assemblage of 'stuff', including natural, digital and fleeting ephemeral modes.

This research found that children use unexpected resources in unexpected places in unexpected ways to make meaning. Because of this, such activity risks being taken for granted, overlooked or dismissed in the 'busyness' of an early educational environment, where such instances of learning may not be deliberate moments of 'teaching'. The moments of play examined in this thesis did not take place in response to adult-led activities planned to address certain curriculum goals, nor did they make use only or primarily of the anticipated resources that early years settings typically provide for 'learning through play'. This calls for a disposition towards learning which takes *every* kind of resource as being potentially meaningful and as being capable of being used for meaning-making, from chairs, leaves, smiles, glances, on-screen icons, actions and sound effects to more 'conventionally' recognised early years resources.

Transformative Engagement

Across the case studies, the signs the children made in their play were often temporary, fleeting and subject to continual change. For example, in their play in the bushes the children used the chairs in multiple ways: first arranging them in pairs to depict beds in a home, then moments later moving them apart to represent seats at a doctor's surgery, then re-arranging them linearly to signify the seating in an aeroplane. Carefully and closely tracing sign-making in this way helped uncover the interests of the sign-makers, transformed into multimodal signs. Each transformation offered insights into what the children considered 'criterial' to three different social spaces (homes, doctors, aeroplanes). Similarly, in Joey's play with the blocks, his depiction of doors as barriers with rules for opening and closing offered insights into concepts that seemed to be of particular interest to him around access, power and control. The play offered a way in to examining the children's processes of 'transformative engagement' (Bezemer & Kress, 2016), where attention to the children's 'outward' signs of meaning-making

offered subtle insights into their 'inner' meaning-making, including their interests, ideas and theories about the world.

This sign-making can be seen as transformative not only in that chosen resources are transformed into new signs, but transformative in that through making a sign, meaning-makers re-make themselves (The New London Group, 1996). As Bezemer and Kress note, "with every sign made, the sign-maker's knowledge is transformed" (2016, p. 50). Through engaging with an aspect of the world in some way, and making choices about how to represent it, the sign-maker's understanding will inevitably alter, however subtly. Whilst this study focuses primarily on in-depth analysis of short episodes of play, repeated observations of the children's play over time could be used to consider how transformative engagement indicates the children's changing signs of learning. For example, observations of other instances of Jake and Ben creating 'homes' using different resources would offer different insights into their meaning-making around this same concept, and observing other constructions built by Joey, in various forms and contexts, may offer further insights into his interest and exploration of concepts such as power and control. In this way, play can be seen as not just a way in which children make evident their thoughts, knowledge, and understandings, but a central means by which children's thoughts, knowledge and understandings are constructed and shaped. This opposes notions of learning as transmission in which learners copy, receive or acquire meanings presented by others, instead proposing that learning "is the inevitable outcome of any and every engagement with the (socially made) world"(Bezemer & Kress, 2016, p. 37). Such a perspective has implications for what we consider the value of play to be, and the significance for practitioners seeking to support children's learning.

Considering play as transformative engagement, this study highlights that the resources available for sign-making have inevitable implications regarding precisely how the world can be engaged with, and so shape the possibilities for meaning-making. If the blocks had not been available to Joey, for instance, or if he had been asked to describe his house, draw it, or write about it, representing it in these different modes would have altered the means of engagement, resulting in different signs, and so different meaning-making. A sound cannot be exactly replicated in an image, just as movement cannot be exactly described in language, and so on. In creating his house Joey was making decisions about how to make that sign visually, aurally, spatially and through movement. The symmetrical, mechanical action of moving the bricks apart, for instance, demonstrated one facet to the house, as being ordered and systematic. The mechanical sound-effects demonstrated a further aspect, signifying a futuristic house rather than a typical everyday house. The construction's elevation onto the window ledge, and the further central placement of the 'captain' raised onto the window's handle denoted its particular importance and significance in relation to controlling the house. Since all modes have inherent affordances, moving across modes presents conceptual and cognitive challenges (Kress,

1997). In using multiple modes, each mode offered different potentials for meaning-making, creating different signs of learning.

The ability to move between modes enabled the children to compensate for limitations experienced in each mode, and to make the most of each mode's potentials. Pahl suggests that closely observing children's transformative sign-making is akin to "tracking the flow" of particular ideas and concepts in various incarnations (1999, p. 27). Stein suggests that free play and educational practices that invite, support and recognise the movement between modes are desirable as they "enable learners to play with nameless and wordless concepts and 'fix' them in multiple variations" (2003, p. 120). Furthermore, an approach which invites and supports movement between modes can be seen as related to creativity. Hofstadter suggests, for instance, that the crux of creativity is "making variations on a theme" (1985, p. 233). From such a perspective, young children's meaning-making in child-initiated play is highly creative, drawing upon, and moving between, multiple modes to express a particular theme or concept.

As was evident across the case studies, the children's play entailed the innovative selection of modes, combined and transformed to exploit their particular potentials to create new signs. It supports Pahl's suggestion that "multimodality can help extend an understanding of creativity" since it expands what signs get recognised as being creative (2008, p. 141). A multimodal social semiotic perspective on sign-making recognises that every act of sign-making is creative and innovative, as it inherently involves the creation of a new sign, always in multiple modes. This therefore positions creativity as entirely everyday, but nonetheless entirely remarkable. As Bezemer and Kress note, in order to understand learning, "Creativity and innovation will need to be seen as the ordinary, banal, constant processes and phenomena that they are" (2016, pp. 6–7). Seeing all sign-making as intrinsically creative and innovative has resonances with Craft's work on 'everyday creativity' and 'little 'c' creativity' (Craft, 2002). Moving away from understandings of creativity as concerned only with the arts, music and drama, or a particularly rare attribute held only by the gifted few, this study highlights the creative capacities of all individuals. Furthermore, through development of apt methodologies, this research emphasises the many materials and resources which can be used in meaning-making and the different potentials and constraints they might offer.

This has implications for how researchers and educators provide for, support and recognise the ways that young children combine and move between modes in their play. The findings of this study suggest that careful consideration of the kinds of materials and environments made available to young children is necessary, reflecting on what is 'to hand' for children's meaning-making in their play. Furthermore, the findings demonstrate a need to recognise and support children acting creatively and with agency. The importance of open-ended resources, flexible environments and supporting children's agency have been similarly emphasised by Broadhead (2010), who suggests that early years settings might provide a 'whatever you want it to be

place' where children can take the lead in transforming their play spaces. Similarly, approaches such as those inspired by Reggio Emilia and Steiner philosophies place particular emphasis on children as active constructors of meaning and the importance of open-ended materials for meaning-making. Free-flow, play-based provision is fairly typical in English early years settings such as the nursery in this study, yet play may be compromised and such an approach does not normally extend beyond the early years, as more formalised learning approaches and assessments privileging language are given increasing priority (as discussed in Chapter One). Recognising play as creative transformation raises questions as to whether play-based approaches and the opportunity to explore and 'fix' ideas in multiple modes ought to be characteristic not only of early years education, but education more broadly.

Agency and Interest

The case studies have highlighted the many diverse resources the children drew upon and transformed in their play, and within this emphasised children's agency as sign-makers. Within each episode of play, the individual children brought their own particular experiences of the world to bear on their sign-making. Within a socio-cultural turn in education, it is now widely recognised that children's motivation to express a particular thought or idea will be shaped by a complex combination of social and cultural factors, and this evidence of children's interest emerged as a theme in this study's findings. The play of the boys in the bushes, for instance, incorporated a range of ideas, including homes, doctors, treasure, baddies, chocolate, aeroplanes, emergencies and seatbelts, likely to have been shaped by their family and community experiences, books, media texts and other encounters with the world. The influence of popular culture on the children's play was also indirectly evident, for instance in the traces of motifs from science fiction and adventure computer games in Joey's house. As Opie notes, children's play is influenced by their numerous intertwined experiences of life which form the "ingredients" for play (1993, p. 12) and Kress similarly considers the "ancestry" of ideas that are manifestested in the things children create (1997, p. 30).

There was evidence in the case studies that the children's sign-making was motivated by a range of factors, including the social relationships between the children themselves. Joey's house design was considered and precise, with its rules of operation and its order having to be 'just so' (as Lizzie was to find out). In Ellie and Toby's play at the computer, Ellie seemed to delight in making Toby laugh, and Toby seemed to delight in Ellie's teasing. Similarly, when Jake helps Ben with his imaginary seatbelt, or when George and Billy decide to leave their running game to go inside for a drink together, the children's play seemed deeply motivated by social relationships, feelings and friendships. In this way, the case studies highlighted that the children's play was both highly social, and shaped by many facets of their interest. 'Interest' here draws upon Kress' term which attempts to account for both the social and individual motivations in sign-making (1997). The children's play was clearly shaped by both their own

place and perspective on the world at a particular moment in time, and the individual and shared experiences which socially constructed that perspective. In this way, the case studies highlighted traces of the children's multiple complex motivations at play including mutual interests and concerns for each other.

The recognition of children's interest and agency was a particularly striking finding in terms of my own prior research on young children's meaning-making. My previous research in the nursery context (Cowan, 2010) focused specifically on children's meaning-making with natural materials (e.g. pebbles, pine cones, shells, sticks, bark, conkers). The study drew upon the Reggio Emilia concepts of 'rich simplicity' and the 'hundred languages', which propose that such materials are particularly valuable for supporting creativity through their multiple possible uses (Brunton & Thornton, 2009). In this small-scale action research project, I suggested that such materials potentially invite more possibilities for creative, multimodal sign-making than toys and resources which appeared more 'closed' in their design. However, the findings of this doctoral research have somewhat challenged and developed this perspective.

The findings of the present study reveal that children drew on materials of all kinds, including those 'pre-designed' with a particular curricular aim in mind, in new and creative ways. For example, in the episode of computer play, the *2Simple* computer game was designed as a sorting activity related to grouping objects by their material properties. However, Ellie and Toby used the on-screen items as props in an entirely different off-screen game, making up scenarios about the items and playfully teasing each other about throwing them away. This game, presumably not envisaged by the game's designers, showed the children's agency and interest in using resources in unexpected ways beyond their 'designed' purpose. Similarly, Joey's play involved a number of small plastic model insects, presumably designed to support knowledge and understanding of the natural world. Yet at no point did Joey speak of these as insects, or even animals, instead using them to represent 'the captain' and 'the babies' of his house. Their movement (e.g. lying on their backs to depict sleeping), their talking, their trip to the shops and their house in no way resembled the activity of the animals they were designed to represent. Joey used these models to represent something altogether different to that which they had been designed to signify, highlighting his own interest and agency as a sign-maker.

The children demonstrated creativity and innovation beyond that envisaged by the designers of the educational resources, and beyond that which I envisaged as a teacher and researcher. These findings somewhat challenge the assumption that certain materials inherently have more creative potential and invite more possibilities for transformation than others, although it reiterates the importance of acknowledging and understanding affordance and meaning potential. For instance, the toy insects were hand-sized representations of animate creatures, which Joey seemed to consider apt signifiers for characters to inhabit his block house. The case studies therefore emphasise that even items which have a strong referent (e.g. the toy insects)

are capable of being transformed owing to the interests and agency of the sign-maker. This suggests that when considering play, implications extend beyond merely considering what materials and equipment to make available, placing emphasis on our recognition of meaning-making in all forms.

The findings of this present study highlight that a centrally important feature of child-led play was the high degree of agency and control it offered to children. As they played, the children were able to make choices and decisions about what and how their meanings would be represented. This calls for a disposition towards play which recognises it as multimodal social meaning-making, shaped in complex ways by children who are acting with agency, motivated by affect and interest. In addition to provision of resources and an environment which supports multimodal meaning-making, as is the preoccupation of many early years settings, this perspective demands careful reconsideration of the relationship between play and learning in order to recognise the depth and breadth of meaning-making. It requires a commitment to making visible, sharing and valuing meaning-making, in all the many unexpected and sometimes challenging or unconventional forms it may take.

Framing Play Multimodally

Across the four case studies it was clear that to place attention only or primarily on what children said in their play would have been particularly limited, giving a highly partial view of the interactions. In several instances, such as Toby at the computer or Billy and George during their running game, the children chose not to speak or spoke very little, yet there was nonetheless complex interaction and meaning-making occurring in their play negotiated multimodally. This is illustrated perhaps most acutely in the comparison of transcripts of the children's computer play (Chapter Five), highlighting that to focus only on children's language in research potentially renders certain participants invisible (see also Flewitt, 2005b). Furthermore, this study highlights that multimodal features were not merely extraneous context to the children's speech, but were central to the communication itself. This was illustrated particularly clearly in the children's game of chase, where rules and roles were negotiated through complex combinations of 'ephemeral' modes, for example speed, distance, gaze and gesture, forming an 'invitation' to chase, and a means of declaring 'truce'.

There were also numerous occasions in the play observations where the children's speech seemed, on the surface, to be confrontational. For instance, Ellie persistently verbally challenged Toby at the computer as if they were having a dispute ("Don't throw that away!", "No, I need that" etc.). Jake and Ben appeared to disagree over positioning of chairs and what they might represent ("No no no no this IS the doctors") and how to fasten an imaginary seatbelt ("You put this- N-no"). In their running play, George, Billy and Tom differ in their understanding of who is chasing who and the precise rules of the game ("No – you got me, I got you!"), and

Joey seems to purposely devise rules to restrict Lizzie from entering his block play ("It's not working!", "No, they're asleep"). When focusing primarily on these spoken exchanges, an initial interpretation of such play might suggest that disagreements and conflict were frequently central, and that the play was disruptive. A traditional orthographic transcript prioritising speech as writing might have supported such an interpretation. However, multimodal analysis highlighted that these apparent disagreements were underlined by careful unspoken communication of the message, 'This is play'.

The concept of 'play frames' has received notable discussion (Bateson, 1956; Garvey, 1977; Goffman, 1986), though little attention has been given to precisely how such frames are established, and less still to whether and how this is achieved beyond language. The detailed, fine-grained multimodal transcription in this study enabled close consideration of how such messages were negotiated. For example, the transcript of the children's computer play highlighted precisely when gazes and smiles were shared between the two children, coinciding with Ellie's feigned upset reaching its most exaggerated and emphatic. This suggested that multiple modes were used to carefully 'check' and signal that the play was being enjoyed and approved of by both the players, despite language which suggested disagreement. Similarly, as Joey's rules about entering his house became increasingly restrictive, and as Lizzie found ways to subvert them, the children glanced at each other and smiled in enjoyment as if to gauge and convey the playfulness of the situation, communicating that they were 'in on it together'. Therefore, whilst attention to the children's speech might suggest child-initiated play often featured conflict and disagreements, attention to multimodal dimensions of their play instead showed complex, layered and mutually-responsive sign-making which both communicated themes *of* the play and messages *about* the playfulness of the activity.

Tovey emphasises the importance of this social 'camaraderie' in play, suggesting that much of the fun of play comes from "the conspiratorial enjoyment of doing things that are not what they seem to be" (2007, p. 24). In the case studies, such pretence *and* awareness of the pretence was central to the fun of the game. This seemed to be based upon careful creation of a play frame which carried the message, 'This is play'. Bateson (1956) suggests that framing an activity as play is particularly sophisticated since it hinges delicately upon things being not quite what they seem. Communicating the message, 'This is play' requires both the use of signs as standing for something else, and mutual understanding and awareness of these signs. He likens this process to reading a map and developing understanding both that the map represents a territory and is distinctly different to that which it represents, with both these understandings being held in the player's mind simultaneously:

> Play marks a step forward in the evolution of communication - the crucial step in the discovery of map-territory relations. In primary process, map and territory are equated; in secondary process, they can be discriminated. In play, they are both equally equated and discriminated. (Bateson, 1956, p. 321)

Similarly, Goffman considers the particular “transformational power of play”, with the ability for ordinary objects to be given new meanings (1986, p. 43). Rather than maps, he uses the musical analogy of ‘key’. For example, he suggests that playfighting is patterned on real fighting yet is recognised by the participants as not being what it appears to be as it is carried out in a different ‘key’.

Bateson considers this a particularly significant step in communication, terming it ‘metacommunication’, yet less attention has been given to precisely how such play frames are constructed. Where the play frame has been given further consideration, emphasis has often been placed on language. Building on the work of Bateson (1956) and Goffman (1986), Sawyer (2003) proposed that pretend play is achieved using speech located explicitly outside of the play frame (for example, a child commenting ‘Let’s pretend that there’s an emergency’), or implicitly within the play frame (for example, ‘Help me! There’s an emergency!’). With a similar focus on language, Garvey (1977) identified features of language such as exaggeration and tone of voice as signals of play.

Taking the focus beyond language, the case studies reveal that the message ‘This is play’ was communicated through complex multimodal orchestrations that were collaboratively and socially constructed and negotiated. The in-depth multimodal analysis suggests that these aspects of the play frame were not solely, nor even primarily, communicated using language, but involved modes such as facial expression, gaze and body positioning. It expands Bateson, Goffman and Sawyer’s notion of ‘metacommunication’ in play beyond its original focus on language and features of language. Furthermore, it does not see modes such as gesture, gaze and facial expression as ‘extra-linguistic’ or ‘non-verbal’ background information, but emphasises their central communicative importance in combination with other modes.

The case studies reveal that the message which communicates the play frame is always highly complex and multimodal. Furthermore, it seemed that through their play the children took enjoyment in shared understanding of the play frame and seemed to be developing an increasingly sophisticated awareness of sign-making, exploring the idea that things could be used to stand for something else. This supports Paley’s suggestion that young children ‘play with possibilities’ (1981). Paley’s work primarily considered play in relation to literacy and language, but the case studies suggest that the children were playing with making more than one meaning across multiple modes. For example, meanings were explored through representing mock shock in facial expressions, creating new play places through the organisation of the space, and communicating rules and roles through movement and action. The unspoken pretence often seemed central to the fun of the play. For example, Ellie and Toby in their computer play seemed to be playing with the idea of real and pretend emotions as they played with ‘pretend’ on-screen items and ‘real’ off-screen reactions. Similarly, Joey and Lizzie seemed to take delight in exploring the risky area of power, control and resistance through

developing, adapting and challenging rules, defying each other but simultaneously ensuring that the message 'This is play' was communicated multimodally.

The episodes of play analysed in the four case studies extend Bateson's emphasis on the importance of play to suggest that the children were learning about their own power and agency as multimodal social sign-makers. This raises further implications for how we see play, moving beyond unquestioned emphasis on children's talk, which may assume that speech which seems confrontational is necessarily a disagreement, or assuming that children will be able to verbalise and describe the things they make and do in their play. Instead, those interested in play ought to be aware that play involves complex, multi-layered signs in which messages *about* the playfulness of the exchange may be just as likely to be expressed multimodally as the themes and ideas within the play itself. Such in-depth insights into this moment-by-moment unfolding and complexity would not have been afforded by traditional means of representing play, nor by a traditional monomodal emphasis on children's language.

Multimodal Transcription as Design

The insights discussed in the four key themes above emerged owing to not only a multimodal social semiotic perspective on play, but the use of apt multimodal methods and methodologies, with the use of multimodal transcription being particularly significant. This section discusses the role and design(s) of transcripts within a multimodal social semiotic frame and considers how forms of representation can shape the conceptualisation of play within the early years. In this way, the study's second research question is addressed: 'How might video and multimodal transcription offer new ways of seeing and understanding child-initiated play?'

The choice of video as a method for observing play was vital. Observing the children by eye in real-time would have undoubtedly led to much of the richness and complexity passing by unnoticed within the busy, noisy, fast-paced nursery classroom. Similarly, to have relied solely on recording observations as field notes would have limited what multimodal detail could have been noted. Observational photographs would have enabled 'snapshots' of the play but would not have created a lasting audio-visual record, preserved in real-time. Whilst video-recording had its limitations (see Chapter Four), video was an invaluable way of capturing much of the multimodal richness of the play episodes, preserving the simultaneity and synchrony of interactions, enabling repeated revisiting and allowing close attention to the play episodes.

However, existing research conventions inherited from linguistic approaches present many challenges to working with video (see Chapter Three), and the tools and strategies for dealing with such data within a multimodal methodology are still in development (Bezemer & Mavers, 2011; Cowan & Kress, 2017; Flewitt, Hampel, et al., 2014). The traditions and conventions associated with transcription are inherently in tension with an approach which seeks to analyse

communication beyond language. As researchers grapple with the challenges of new forms of data and attempt to represent the multimodality of meaning-making, there has increasingly been a move away from adherence to fixed, stable sets of transcription conventions, and beyond critique of such conventions, towards increasing variation and experimentation in *design* of multimodal transcripts. This resonates with the notion of design as a shaping force, and the idea that design, in contrast to convention and critique, points towards the intention to produce change (Kress, 1997).

A focus on design entails the imagination of different, new possibilities for representing meaning-making. The four different transcript designs presented in this thesis (the timeline, grid, comic strip and map) highlight the diversity and variation that is possible, and arguably necessary, in research seeking to represent the multimodality of meaning-making. Increasingly, discussions of the genre of transcription recognise that all transcripts are necessarily partial representations which can take many different forms and versions (Bird, 2005; Duranti, 2006; Ochs, 1979). This is particularly the case with dynamic visual data and the challenges it presents for transcription into a static representation on the page or page-like screen (Bezemer & Mavers, 2011; Flewitt, Hampel, et al., 2014). As Lapadat and Lindsay note, in transcription, "a quest for one standard set of conventions is not likely to satisfy all" since researchers will require the flexibility to suit transcripts to their different purposes (1999, p. 81). Instead, we might consider Duranti's perspective on transcripts as 'hybrids' (2006) and Bezemer and Kress' suggestion of 'bespoke design' (2016), reflexively drawing upon the conventions available in principled ways for different purposes and audiences.

In this research, each case study transcript makes use of a different design, seeking to employ the most apt forms for representing the modes central to the different episodes of play. Unlike traditional transcription conventions, writing is not presumed to be a universally suitable mode of representation. So, for instance, in the episode of role play in the bushes where the positioning of chairs seemed to be particularly central, the transcripts incorporate plan-like representations of the space's changing layout. Similarly, in the running game episode where the embodied qualities of the children's movement seemed to be of particular significance, attempts were made to visually depict aspects such as direction and speed. In this way, 'ephemeral' features of the play were 'fixed' in transcripts by moving away from typical transcription conventions and attempting to develop principled, innovative multimodal designs. This shaped what the transcripts made visible, and so what could be given attention and recognised as meaningful. In this study, multimodal transcription has proven particularly useful for researching play, offering valuable insights into the ways children construct and negotiate meaning on a moment-by-moment basis, attending to the many communicative modes used in addition to, or in the absence of, speech. This proposes a more respectful means of researching children's diverse ways of communicating and interacting, and has relevance for educational research more

generally, looking beyond the traditionally educationally prioritised linguistic modes of speech and writing (Flewitt, 2006; Pahl, 1999; Stein, 2008).

In addition to the inherent tensions regarding multimodal methodologies and transcription's historical emphasis on language, there is a further tension regarding the typical positioning of transcription in research. Much research has traditionally viewed transcription as a relatively simple intermediary stage, often an outsourced secretarial task, positioning transcription as a straightforward process of preparation for analysis and dissemination (Davidson, 2009; Judith Green et al., 1997). From a multimodal social semiotic perspective, the notion of copying is problematic since all sign-making, including transcription, invariably involves the creation of a new sign, always newly designed for a particular audience and purpose, and so always transformed from its 'original' form (Kress, 1997). This issue is particularly pronounced when re-presenting one mode (e.g. speech, gesture) as another (e.g. writing, image), with meaning inevitably changing as the result of the re-making across modes. The process of *transduction* inherent to transcription consequently results in certain features inevitably being foregrounded, and others backgrounded, shaped by and in turn shaping theory (Ochs 1979). As Bezemer and Mavers suggest, all transcripts are therefore "transducted and edited representations through which analytical insights can be *gained* and certain details are *lost*" (2011, p. 196). In this study, recognising transcription as transduction has been a central consideration, attempting to acknowledge the partiality of all transcripts and to consider the potentials of such a process in addition to the challenges, situated within substantive case studies.

As the discussion of transcription within each case study has demonstrated, this process of transduction has been approached in terms of selectively representing and closely focusing attention on a particular aspect of the world to generate new insights. For instance, representing the dynamic running play in a static 'map' form is an inevitable transduction. Characteristic of transduction, it involves both gains and losses (Kress, 2005). Through 'fixing' ephemeral aspects of the play, certain features were foregrounded that had not been immediately obvious from the original video recording. The shift of perspective, and the act of mapping itself, drew attention to patterns and points of interest in the mapped representation, enabling scrutiny of movement and use of space as a crucial aspect of the play. In this way, the process of *notation* supported certain *noticing*s. It drew particular attention to George's movement in a circular direction accompanied by decreasing speed, which Billy mirrors just before the two children decide to go into the classroom to create a moment of 'winding up' the play. This pattern was not immediately evident when viewed from camera-level but made more striking when re-presenting the movement as if looking from above. It identified a means through which roles and rules were negotiated and how messages about the play were communicated multimodally. In this way, the transcripts reiterate the position that transcription can act as an important "noticing device" (ten Have, 2007, p. 95) and "discovery procedure" (Duranti, 2006, p. 307) in the research process, with inevitable transduction from one mode to another being used as a

means to highlight and examine aspects of meaning-making in detail. I therefore suggest transcription ought to be considered part of the *process* of analysis, selectively engaging with video in ways shaped by the researcher's interest and theoretical position, rather than mere *preparation* for analysis.

In addition to their function as part of analysis, transcripts act as important rhetorical devices, creating records that can be shared. There is a concurrent challenge regarding the need to ensure transcripts are useful analytical devises and are simultaneously intelligible and accessible to their intended audiences. Design choices are thereby further shaped by the necessity to include appropriate detail whilst remaining coherent, and by possible constraints of the media of dissemination (e.g. page size, formatting or colour constraints in printed publications). For instance, a version of the timeline transcript featured in Chapter Four had to be reworked to feature in a journal article which would not include colour figures in its print-based versions, so had to be created to also work in grayscale (Cowan, 2014a). This thesis has sought to draw attention to such considerations and make these factors explicit, for example in the discussion of the preparatory stages of designing the map transcript (Chapter Eight). This study therefore demonstrates the many demands and considerations faced by the transcriber which shape transcript design at every stage, often resulting in multiple versions or reworkings rather than one definitive transcript.

The reflections within each chapter seek to place transcription firmly under the microscope, examining its function as an analytical and rhetorical device and explicating the principles of their multimodal design, rather than positioning transcription as transparent, intermediary or irrelevant. This responds to the criticism that there is too often an absence of discussion about transcription in research reports (Davidson, 2009; Stelma, 2009) and Ochs' recommendation that careful consideration of transcription-as-theory is necessary both for researchers in their own work, and to inform their understandings of transcription in the research of others (1979). Each of the four different transcripts in this thesis practically demonstrates some of the innovation and variation that is possible in multimodal transcription, and its role in multimodal analysis. Each transcript inevitably foregrounds certain features and obscures others, a quality necessary for analysis and guiding the reader through findings, but which places particular responsibility in the hands of the researcher. It becomes vital for researchers to examine their own transcripts, reflecting upon transcription as a key stage in the research process (Bird, 2005; Vigouroux, 2007), making choices and decisions principled and transparent.

This study has contributed four experimental forms of 'hybrid' multimodal transcripts with detailed accompanying commentary, which it is hoped suggest possible new forms multimodal transcription might take, prompting critical researcher reflection on transcription within a multimodal methodology. The transcripts in this study seek to give clarity to episodes of play that may at first appear chaotic and disorganised, supporting the observer to look beyond the

fast-paced, fleeting nature of such play and to consider the ways young children are subtly making meaning. Rather than seeing such activity as unfocused or unproductive, which may be easily overlooked or disregarded, I suggest this 'fixing' of ephemeral modes in transcription supports recognition of *many* forms of meaning-making, thereby recognising the capacities of many meaning-makers. The multimodal transcripts in this study can therefore be seen as a means of "making what is currently unnoticeable noticeable, what is inaudible audible, and what is invisible visible" (Bezemer and Kress, 2016, p. 5).

Chapter Ten: Conclusions, Implications and Recommendations

The notion of 'visualising young children's play' encapsulated in this study's title has a double significance: 'visualising' not only as making play visible and sharable, but also shaping *how we see play*, including how we conceptualise it. I argue that a multimodal social semiotic perspective on play has the potential to profoundly expand what gets valued in early years education; to show children's meaning-making where it might not usually be looked for, seen or recognised, and to show agency and design where it might not immediately be apparent. This chapter states the implications of such a shift in attention and offers recommendations regarding the tools and dispositions necessary for noting, noticing and valuing meaning-making of all kinds, in all forms, by all meaning-makers.

The chapter begins by proposing ways in which the multimodality of child-initiated play might be given greater recognition in early years education, through developing a multimodal social semiotic perspective on play *as* learning. This is considered specifically in relation to implications for the observation and documentation of play in early years settings. In addition to these considerations for educators and education research, the thesis concludes with reflections on the methodological challenge of transcribing this broader visualisation of play, which could be of relevance for the wider field of multimodal research. The final section summarises a series of considerations for multimodal researchers and suggests possible directions for further work. In combination, it is hoped that an original contribution is made in relation to the central issue of *recognising meaning-making* in early years educational theory, practice and methodology.

Recognising the Semiotic Playfulness of Learning

This study's fine-grained analysis, underpinned by an exploration of multimodal transcription, has supported detailed insights into young children's meaning-making in play within a multimodal social semiotic frame, revealing it to be complex, layered, transformative, creative and agentive. I wish to suggest that principles underpinning the multimodal transcription developed in this study have notable relevance for theorists and researchers of play in addition to practitioners. This relies, in part, on a reconsideration of play in relation to learning

The perspectives on play critically discussed in Chapter One of this thesis demonstrate a longstanding emphasis on the importance of play for young children, usually as a vehicle through which the 'business' of learning might be made more enjoyable or a means through which to accelerate development in relation to particular normative models. The dominance of developmental psychology, manifested in theories of stages and emphasis on typical linear development (e.g. Piaget, 1962; Sutherland, 1992), continues to be a highly influential perspective, significantly shaping current policy and guidance, informing statutory documentation such as the EYFS Framework (Department for Education, 2017) and EYFS

Profile (Standards and Testing Agency, 2016). Whilst stating the importance of play, these documents position play as a medium through which developmental milestones can be met, with overtones that adult-led play should be increasingly prioritised. Simultaneously, the neoliberal education climate increasingly intensifies agendas of accountability, performativity and school-readiness, compromising the position of play at the expense of high-stakes testing and a demand for quantifiable data (Bradbury & Roberts-Holmes, 2017).

The dominant 'learning through play' discourse has positioned play in relation to an adult-defined curriculum and developmental agenda, emphasising the potentials of play as a means of reaching particular learning outcomes. The EYFS states that, "Each area of learning and development must be *implemented through* planned, purposeful play and through a mix of adult-led and child-initiated activity" (Department for Education, 2017, p. 9, emphasis added). This statement encapsulates the idea that play is the means *through* which to 'implement' learning, positioning play as a vehicle onto which educational aims might productively be harnessed. The consequence of this developmental perspective is that play is positioned instrumentally (Rogers, 2013; Wood, 2010b), an example of Sutton-Smith's 'play as progress' rhetoric (1997). Within such an approach, the significance of play to children themselves is in danger of being overlooked, and its intrinsic qualities hijacked for the purposes of teaching, learning and assessing.

This 'pedagogization of play' is increasing being scrutinised and challenged (see Broadhead, Wood, & Howard, 2010; Rogers, 2013; Wood, 2010). My research provides specific examples highlighting ways in which developmental perspectives are insufficient and flawed. For instance, Joey's block construction would score poorly on categorisation of block play stages (e.g. Guanella, 1934; Reifel & Greenfield, 1982), and George and Billy's running game would be classed as 'less developed' than play which expressed rules verbally according to the play stages of Blurton-Jones (1967) and Pellegrini (1989). Across the examples, the relative absence of talk might be considered in developmental terms to classify the play as somehow deficient or undeveloped, seen merely as preparation for later, more sophisticated stages. However, the case studies presented in this thesis reveal the multimodal richness and complexity of children's play. The case studies problematise the idea of 'progression' from physical forms to verbal forms, and the multimodal visualisations provide a robust framework for recognising all play as complex meaning-making in its own right.

Dominant discourses surrounding play and learning are difficult to alter, yet contesting the discourse serves to present other possible narratives (Dahlberg & Moss, 2004; Moss, 2014). Alternatives to a developmental discourse have been proposed advocating a 'discourse of meaning making' (Dahlberg et al., 1999; Bradbury & Roberts-Holmes, 2017) and 'playful pedagogies' based on a socioculturally-framed position towards play that attempts to recognise "what play means for children" rather than "what play does for children" (Wood, 2010a, p. 12;

see also Broadhead et al., 2010). A social semiotic perspective usefully builds on such an approach through its particular emphasis on meaning. It positions play as an activity which, like all social activity, always has transformative, agentive meaning-making at its very core. As with every act of sign-making, so in play the sign-maker engages in principled communicative choices, shaped both by their interest and by what is available at that moment, in order to make meaning in a particular social and interpersonal context. In every act of sign-making, meaning is made anew, and in the act of making, so the sign-maker's own understanding is reshaped. Play, as meaning-making, can therefore be considered a frame for 'transformative engagement', transforming both the outer signs and the inner signs of the sign-maker. In this way, I suggest that my research supports a perspective on playing *as* learning. Furthermore, a *multimodal* social semiotic perspective highlights that play is always realised in a multiplicity of modes, each with particular affordances that shape the meaning-making in distinct ways and with implications for how these signs of learning are made apparent.

A multimodal social semiotic perspective on play *as* learning provides an alternative to the increasingly critiqued 'learning through play' discourse by highlighting play's complexity and central importance to children's lives. The insights from this study make instances of children's multimodal meaning-making in play visible, knowable and sharable, and thereby giving value to aspects of play which may otherwise go unrecognised. Such a perspective supports the prominent positioning of play in early years education but somewhat reformulating how play is understood in relation to learning, resisting simplistic linear sequences and categories, instead offering a respectful and democratic perspective on play.

By grounding the discussion in detailed instances examining how play unfolds and how meaning is made, this thesis seeks to avoid simply repeating the often-espoused, unanimously positive 'play ethos' critiqued by Smith (2010). Rather than building a case for play founded on idealised notions or 'cherished beliefs' (Anning, 2010), my research emphasises and exemplifies the close association between play and learning, but in a reformulated position to the typical instrumentalist play discourse. Although semantically subtle, this conceptualisation of 'play as learning' constitutes a distinct but significant shift away from the dominant discourse of 'learning through play'. It entails a move away from play as a means *through* which to direct children to particular pre-defined learning outcomes, or to address perceived 'gaps' in learning. Instead it seeks to acknowledge and value the activity of play itself *as* learning. Such an orientation suggests that every trace of semiotic work, every sign made in play, is a sign of learning, regardless of the degree to which this has been shaped (or not) by others such as teachers (Bezemer and Kress, 2016). This supports a pedagogy concerned with recognising and supporting what is present as meaning-making rather than what is absent. Such a shift in perspective raises implications for how play is (or is not, or might be) given attention in early years classrooms.

Play as the Child's Semiotic Work

An oft-repeated saying, variously attributed to Maria Montessori, Jean Piaget or Susan Isaacs, is that 'play is the child's work'. This study proposes that play might be considered the child's *semiotic work*. This calls for close attention to fleeting, commonplace instances of play, seeing them as significant moments of meaning-making. Emphasising that every act of sign-making is an act of learning, no matter how seemingly small, Kalantzis and Cope declare children's sign-making to be both entirely 'ordinary' and 'extraordinary' (2013, p. 20). As Mavers similarly notes in her studies of young children's drawings, close observation of small everyday instances reveals 'the remarkable in the unremarkable' when considered as principled meaning-making (2011). Such a theory of learning is striking in that it suggests that "the potential for change is imminent even in the smallest and seemingly least significant moments of meaning" (Kalantzis & Cope, 2013, p. 27). Whilst the episodes of play studied in this thesis are in many ways small and everyday, it is my intention to highlight that such instances are important manifestations of children's ideas, interests and orientations towards the world. This re-conceptualisation of play from a multimodal perspective seeks to make a contribution to social semiotic theory, supporting a perspective which endeavours to recognise and take seriously all meaning-making, by all meaning-makers.

A perspective towards play *as* learning calls for educational practice which recognises the value of play as a creative, agentive, transformative activity. It is not my intention in this thesis to imply that practitioners should engage in the detailed and time-consuming transcription practices used in this study, although broad principles for documenting play are considered in the following section. What is hoped is that the visualisation of play presented in the nursery case studies are a means of drawing *attention* to that which might easily be overlooked or dismissed. This study aims to illustrate new ways of looking at play in order to highlight and give value to aspects of play that might traditionally be regarded as insignificant. In turn, it is hoped that the examples from this study might change what kind of attention and identity play is given, where 'play *as* learning' might become a paradigm that is entirely normalised in practice.

Such a perspective requires more than simply valuing play in terms of its usefulness as an educational instrument or a vehicle through which to reach and evaluate predetermined goals. In considering how to move towards an alternative conception, Figure 10.1 depicts a possible spectrum of attention towards play as learning. This aims to summarise dispositions that might typically be adopted towards play in early years education, proposing a movement towards respectful recognition of the value of all play as meaning-making.

At one end of this spectrum, play might not be recognised as related to learning at all (for instance, in a 'work vs. play' binary discourse). Within such a position, attention would not be given to the role of play in education, as it would not be considered relevant, rendering playful learning invisible. Moving along the spectrum, learning would be similarly invisible within a

disposition which acknowledges play, seeing it as necessary for children (for example, to 'burn off energy'), but would not consider it to be related to learning. Within such a position, play might be confined to spaces and times not designated for learning, like the 'playground' or 'playtime', or may pass as an unobserved holding activity between adult-led activities, dismissed due to its potentially noisy, chaotic appearance and perceived threat to classroom order. Giving play increasing attention may move towards utilising play *for* learning, encapsulating the instrumentalist 'learning through play' discourse critiqued in this thesis. However, I argue for a further move towards respectful recognition of play *as* learning, as outlined above, in order to give due attention to the semiotic work that is always present in child-initiated play.

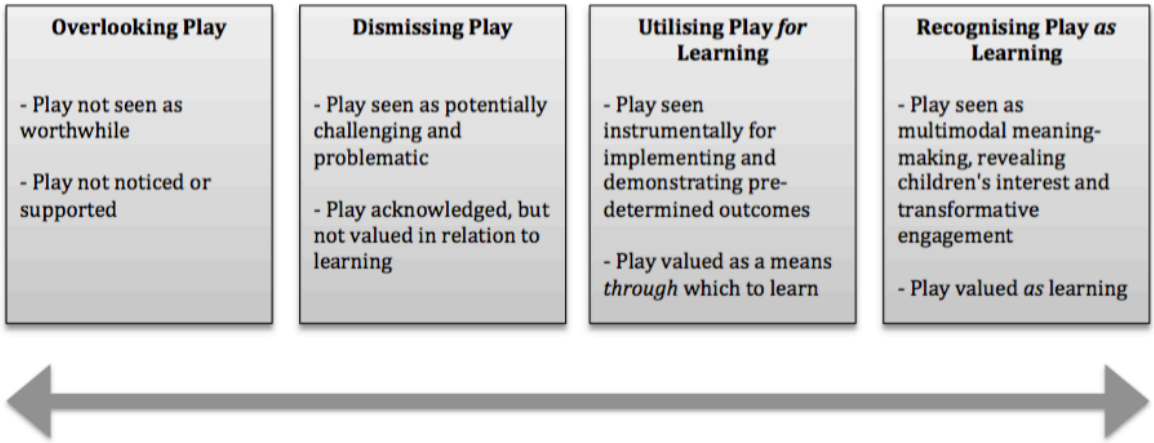


Figure 10.1: Spectrum of attention towards play *as* learning

Whilst my study has primarily centred upon observation of child-initiated play, there are implications for the role of practitioners. There will be times when the adults' interest in shaping new members of the community will begin to shape conditions, tools and purposes, with a 'play *as* learning' perspective prioritising children's own tools, capacities and meaning-making supported through a process of respectful scaffolding. In this way, a multimodal social semiotic perspective prompts not only reconsideration of learning, but also profound reconsideration of teaching and the role of the teacher. This is discussed further in the following section.

The spectrum above might be developed into a tool for use with early years practitioners, prompting articulation of, and reflection upon, their own perceptions of play. Not only are differences in perspective likely to emerge from practitioner to practitioner, but also in relation to different play types due to their perceived relations to learning (for instance, dismissing running play but utilising role play). Prompting practitioners to identify and question their own perspectives towards play in this way might support development of early years practice that recognises play's intrinsic value and gives play greater recognition *as* learning.

It is hoped that the examples in this thesis might help to sharpen attention through making visible and highlighting the significance of small and fleeting everyday instances of meaning-making in the play of young children. Expanding what gets recognised as learning in the play of young children seems a particularly respectful, timely and necessary issue for early years pedagogy and practice, to help ensure that all children's many capacities and potentials might be valued and supported in the earliest phase of education. A disposition towards play *as* learning is the foundation for committed, respectful attention towards valuing all young children's meaning-making. This leads to further implications not only for early years education policy, but also how such attention might manifest itself in contemporary early years classroom practice, specifically in the observation and documentation of play.

Noting and Noticing: Observation and Documentation

Whilst there is a long tradition arguing the value of observing and documenting children's play (for example in the work of Friedrich Froebel, Maria Montessori and Susan Isaacs), this is a practice that currently risks becoming marginalised in early years settings. Although it is given importance in the current EYFS guidance for informing teaching and assessment, the pressures considered in Chapter One such as an emphasis on 'school-readiness' and pressures of more formal, high-stakes assessment at ever-younger ages means time for children to play, and for adults to closely observe play, prove increasingly challenging (Anning, 2010; Goouch, 2010). Child-initiated play therefore risks being overlooked at the expense of prioritising adult-led play or more formalised learning activities, and faces child-initiated play potentially being used merely as an unobserved 'holding' activity (Bradbury, 2013) or dismissed as something disruptive to classroom order (Rogers & Evans, 2008).

Given the many and various demands placed upon the time and attention of early years practitioners, it is easy to see how much of the richness of child-initiated play might be disregarded. For instance, Jake and Ben's persistent reorganisation of chairs, George and Billy's fast-paced running, Joey's noisy block structure and the apparent disagreement between Ellie and Toby at the computer may have easily been dismissed as unimportant or perceived as loud, restless, disruptive play behaviour challenging the order of the classroom. All too easily, much child-initiated play in the early years may pass unnoticed, or be considered problematic, without careful consideration of how play might be recognised in observation practices.

In current practice, when child-initiated play *is* observed as part of early years classroom practice, there is a tendency for observations to enact the developmental discourse discussed in this thesis. In the current EYFS, observations of children's play are expected to inform children's individual assessments, with observations acting as evidence of meeting (or not) the developmental 'Early Learning Goals' (Standards and Testing Agency, 2016). Dahlberg et al. take particular issue with such assessment practices, suggesting that child observation is often

carried out to evaluate children in relation to predetermined categories and acts as a "technology of normalisation" by "classifying and categorising children in relation to a general schema of developmental levels and stages" (Dahlberg, Moss, & Pence, 2013, p. 154). Rogers and Lapping (2012) offer a similar critique, drawing upon Bernstein's suggestion that within so-called play-based approaches, teachers often evaluate and regulate play in relation to a performance-focused model of education (Bernstein, 1975). In this way, observation of play risks becoming an instrument for identifying perceived absences and deficiencies in children's development, defined in relation to an externally imposed set of 'normal' standards.

A further issue for observation of play in the EYFS is the tendency for observations to privilege children's language above other forms of communication. Bradbury's study of early years assessment found that in order to have their learning recognised and be considered successful learners, children had to display their learning in particular prescribed ways (2013). With parallels to Mehan's work regarding what constitutes a 'good learner' (1979), Bradbury suggests that young children have to learn the approved forms their learning can take. Through analysis of teacher observations of play used as evidence for the EYFS Profile, Bradbury concluded that there were two approved ways children could provide evidence of their learning, "First, through talking, particularly about their thinking; and secondly, through taking what they had done to show the teacher" (2013, p. 12).

Bradbury's findings reveal that early years assessments tend to privilege learning that is made evident through language and 'tangible' products such as drawings, models or writing, rather than more fleeting multimodal processes. My research highlights that children's play consists of multiple modes working in complex ensembles, requiring particular attention to forms such as gaze, gesture, sound effects, manipulation of objects and movement around space in addition to (or in the absence of) language. Narrow classifications of what constitute appropriate 'signs of learning' discount much of the embodied, ephemeral meaning-making that was revealed to be central to the children's play within this study. Bradbury suggests that a restrictive emphasis on verbal communication has particularly negative implications for children for whom English is an additional language and children who are quiet. Whilst this is a particular concern, the case studies presented in this thesis suggest that limiting the modes that are available limits meaning-making for *all* children, and failing to recognise multimodality therefore excludes *multiple* signs of learning.

Changes to early years practices of observation and documentation require reconsideration of the underpinning pedagogy. Dahlberg et al. suggest that rather than utilising play to assess whether a child is conforming to a predetermined set of standards, an alternative approach might entail 'pedagogical documentation', focusing on "trying to see and understand what is going on", both in terms of the child's meaning-making and the sense the adult makes of this activity (2013, p. 154). As Dahlberg et al. emphasise:

> What we document represents a choice, a choice among many other choices, a choice in which pedagogues themselves are participating. Likewise, that which we do not choose is also a choice … Consequently, when we document we are co-constructors of children's lives, and we also embody our implied thoughts of what we think are valuable actions in a pedagogical practice. (1999, p. 146)

The concept of 'pedagogical documentation' has connections to the use of documentation as a means for enacting a 'pedagogy of listening' and 'making learning visible' recognition in Reggio Emilia (Giudici & Barchi, 2011). Such an approach is founded upon the central belief that children are rich and capable, possessing 'a hundred languages' of communication and expression (Filippini & Vecchi, 2000). This approach seeks to value the multiple and diverse forms used to both make and express meaning, such as music, dance, paint, clay, light and digital resources. With clear but hitherto unexplored parallels with multimodality, such an approach seems to encapsulate a deeply respectful recognition towards the many forms children's meaning-making takes in play, and carefully defines the role of documentation practices necessary to support this.

What early years educators and education researchers choose to document has the potential to reify deep and respectful recognition of play as complex multimodal meaning-making. Developing recognition also entails consideration of *how* it might be possible to document and share that learning. Here there are profitable parallels with the issue of transcription examined in this thesis. Just as researchers grapple with the issue of transcribing multimodally, so too are teachers faced with the challenge of documenting children's learning in its many and multiple forms beyond language. I have argued in this thesis that transcription is an analytic process, generating new insights into the phenomena under scrutiny through the process of re-presentation. I wish to propose that this has parallels to the teacher's act of documenting child-initiated play, where the act of *noting* what children do in their play might lead to new *noticings* regarding children's meaning-making. That is, in the act of representing children's play in new forms, new perspectives and insights might be gained. Similarly, just as transcripts serve a rhetorical purpose of making analytic work evident and sharable, so too might teacher documentation open up the processes of meaning-making in play to further debate, discussion, reflection and shared understandings. This position calls for further scrutiny towards the forms of re-presentation available and used by early years practitioners in their documentation.

Documenting Play in Research and Practice

Whilst teacher observation and documentation of play were not the focus of this present study, the practice of multimodal transcription has potential significance in terms of proposing considerations for representing forms of communication beyond language. Questions of design, affordance, choice, gains and losses feature both in research transcripts and classroom documentation seeking to represent the multimodality of communication. This might prompt

increasing attention to the forms that documentation takes, and increasing experimentation in documentation design, moving away from formats which privilege language.

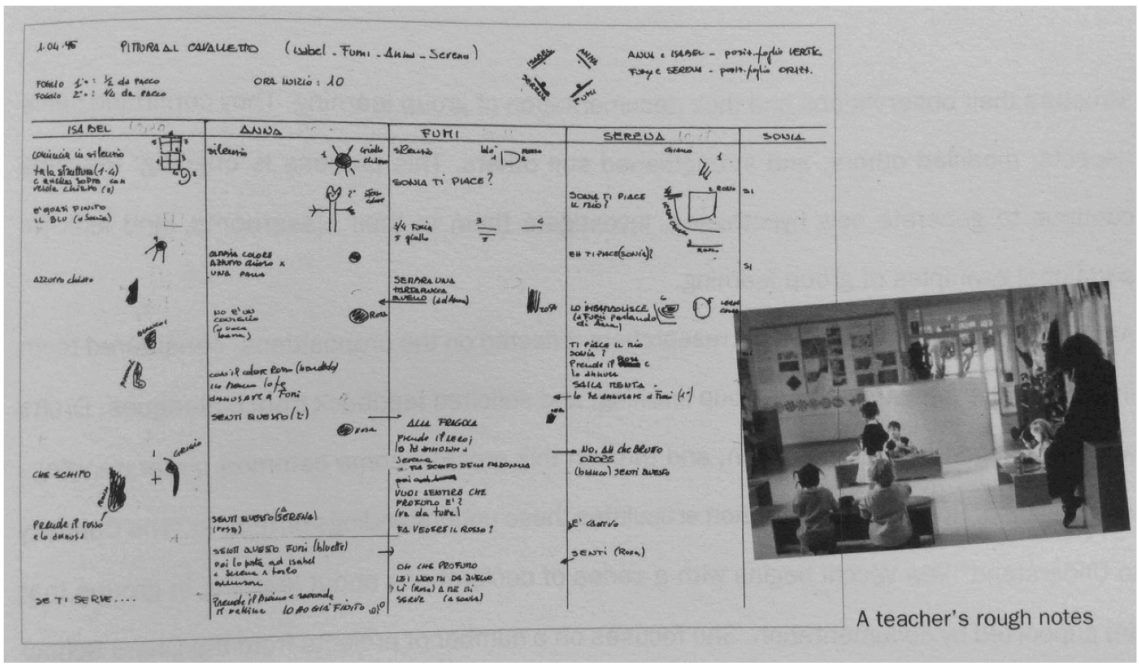


Figure 10.2: Reggio Emilia teacher's notes (Giudici and Barchi, 2011)

To illustrate potential connections between transcription and classroom practice, Figure 10.2 shows an example of a Reggio Emilia teacher's notes observing children (Giudici and Barchi, 2011, p. 155). It is structured around a column for each participant (the children and the teacher) and combines writing, sketches, diagrams and photographs. There are noticeable parallels here with the transcripts featured in this thesis, using similar devices to represent features of interaction beyond language. This suggests that within the 'hundred languages' approach, Reggio educators are giving similar consideration to documenting learning in its rich multimodal complexity. Furthermore, the transcripts serve as pedagogical documentation; their purpose is not measurement of children's learning but understanding meaning-making and informing teaching. They explain:

> Teachers read the transcripts together several times in order to understand and interpret what took place. They also look at photographs as soon as possible, so that they can consider other hypotheses and directions for the research. Based on this review, the teachers generate hypotheses that will structure the next day's experience. The pedagogical research process is continuous. (Giudici and Barchi, 2011, p. 154-5)

This reveals an approach in which forms of multimodal transcription are key to early years practice, with use of the term 'pedagogical research' directly highlighting research-practice similarities. Whilst connections between Reggio Emilia and multimodal social semiotics seem apparent, they have been hitherto unexplored. Further research exploring multimodality and Reggio Emilia's pedagogical documentation might identify possible complementarities and

tensions between the two approaches, with particular relevance for research-practice partnerships embodying an approach to visualising play as learning.

Ways Forward: Digital Observation and Documentation of Play

Further work is needed in order to explore, enrich and support apt early years assessment practices and build on the work in this thesis. Drummond (1994) suggests that much may be learned from the rich on-going documentation of Reggio Emilia (Giudici and Barchi, 2011) and also the approach to 'learning stories' found in New Zealand's Te Whāriki curriculum (Carr & Lee, 2012) in order to develop respectful assessment practices which recognise and seek to understand children's meaning-making in its many forms. The approaches of Reggio Emilia and New Zealand are particularly noteworthy in that they embrace the possibilities digital technologies might offer for observation and documentation of learning. Carr and Lee suggest digital technologies offer "new modes of meaning-making, conceptualising and representing learning" (2012, p. 112) and Reggio Emilia increasingly combine 'digital languages' with more traditional forms in their documentation of projects (see, for instance, Scuola Comunale Dell'Infanzia Diana, 2012). The pressing need is for practices which simultaneously embody the concept of 'pedagogical documentation' (Dahlberg et al., 2013) and a 'generosity of recognition' (Bezemer & Kress, 2016), developing generous pedagogical documentation practices which seek to value and visualise meaning-making in its many forms.

Further research on early years observation and documentation practices becomes particularly urgent since the technologies available for documentation are rapidly changing. Traditionally, observations of play in the early years have been recorded as written descriptions which are linked to the 'Development Matters' guidance and the 'Early Learning Goals' (British Association for Early Childhood Education, 2012; Standards and Testing Agency, 2016), usually forming the basis of an individual child's folder or portfolio. Whilst the EYFS states that observations of children can take any form, including "video/tape/electronic recordings" (Standards and Testing Agency, 2016, p. 15), traditionally such 'Learning Journey' assessment documents have been paper-based and so have predominantly consisted of notes and printed photographs. However, digital recording equipment now readily makes possible the use of video as an additional form of observation and documentation.

As this thesis illustrates, video presents new opportunities and challenges for documenting play. Examining these rapidly changing practices is of high importance since digital documentation differs to practices using the printed page in several significant ways. The portability of new hand-held technologies now supports recording of observations 'on the go' and 'in the moment', combining a range of media simultaneously and immediately, rather than requiring documentation to be compiled retrospectively. Where previously practitioners documented their observations of children predominantly in written forms, digital documentation introduces the

possibility of combining still image, moving image, sound and writing, creating 'multimodal texts' which are potentially more accessible to young children themselves, many of whom do not yet read print. New software for digital documentation also increasingly exploits the shareable potentials of digital media by making observations remotely accessible to children's families online, sometimes enabling parents to create their own observations and comment on their assessments of their child(ren). However, the move to digital formats may result in such documentation being less readily available to children themselves if access to the digital is restricted or highly mediated.

Early years practitioners are increasingly choosing to use digital hardware such as tablets with commercial software designed to record observations and make assessments of children's learning in digital formats. Marketed as tools for streamlining and simplifying assessment, the appeal of digital documentation software to early years settings is demonstrated by its increasing uptake. Since launching in 2012, the market leading digital assessment application *2Build a Profile* has received multiple awards (e.g. British Educational Training and Technology Award 2015; Education Resources Award 2016) and now reports use in over 7,000 educational settings, by over 15,000 practitioners daily, growing by over 100 new settings every week (2Eskimos, 2017). The online learning journal *Tapestry* reports that it has been used to record more than 46,000,000 observations for over 700,000 children in more than 14,000 settings (Tapestry, 2017 – Figures correct as of November 2017). As just two products in a range of available software (also including, for instance, 'Orbit', 'Interactive Learning Diary', and 'EYLog'), the growing market and increasing uptake demonstrates a significant shift in early years documentation practices.

Despite rapid technological changes, and acknowledgement in the EYFS that "settings can record children's learning in any way" (Standards and Testing Agency, 2016, p. 15), official exemplification materials currently illustrate only paper-based documentation, offering advice that no longer reflects contemporary documentation practices in many early years settings. Handbooks for practitioners advising on observation and assessment are similarly out of date, offering only brief discussion of formats such as photographs and video (e.g. Arnold, 2015; Hobart & Frankel, 2004), with no mention of digital documentation software. The limited research in this area (see Boardman, 2007; Lindgren, 2012) leaves digital documentation similarly unexamined, suggesting the need for updates to policy exemplification and guidance, and consideration of the underpinning principles. Currently, information for practitioners on digital documentation is available primarily from marketing materials produced by software companies (e.g. 'Your Definitive Guide to Choosing the Right Digital Learning Journey' produced by software developer *Learning Book*, 2016), driven largely by the need to increase sales rather than by balanced, principled and theoretically founded criteria. The need for high quality research-based guidance is highlighted particularly by practitioners' use of informal online spaces such as forums, blogs and groups (e.g. the 'On-line Learning Journal Group' on

Facebook, currently with over 5,000 members), which suggest there is a proactive community of digital documentation users who are seeking further information and support.

Although research has not yet critically scrutinised digital documentation, the design of such software seems strongly geared towards tracking and measuring the learning outcomes of children, presenting analytic overviews of the 'performance' of individuals and cohorts. The software design may therefore be contributing to the growing 'datafication' and 'dataveillance' of early years education (Bradbury & Roberts-Holmes, 2017; Lupton & Williamson, 2017), resonating with a wider neoliberal discourse and risks becoming separated from child-centred theories of learning. This calls for research that critically examines the potentialities and constraints of digital documentation, both to contribute to theories of learning and assessment, and to provide specific information and support to early years practitioners and software designers. Without such research, the risk is that the potentials of digital documentation will not be fully exploited and their use may be commercially driven, with assessment practices becoming disconnected from educational theories.

The findings of this thesis underpin a follow-on project with Dr. Rosie Flewitt, funded by The Froebel Trust (2017-2018), investigating these timely issues. Entitled 'Valuing Young Children's Signs of Learning: Observation and Digital Documentation of Play in Early Years Classrooms', this study explores the ways in which play is currently documented digitally in diverse early years settings, working with practitioners to develop a pedagogy of observation, documentation and assessment underpinned by the principles of valuing play as learning set out in this thesis. This research has the potential to impact on learning by supporting practitioners' recognition, through digital forms, of 'signs of learning' in play that might otherwise be overlooked, and making these visible to children themselves in newly accessible ways. The aim of this project is to develop practical resources and guidance for early years educators and the designers of digital documentation, with important implications for theory and policy regarding the valuing of *all* children's often subtle signs of learning through play, at a time when early years assessment is under particular debate.

Transcription as a Tool for Recognition

Through exploring child-initiated play from a multimodal perspective, this thesis has examined the methodological practice of 'transcription'. It has identified ways in which both researchers and teachers are grappling with the challenge of recognising and re-presenting the multimodality of play. To reiterate, this thesis is not arguing that practitioners become experts in multimodal transcription. As discussed in Chapters Three and Four, multimodal transcription is highly fine-grained, time-consuming and often technically challenging, and so is not suggested as an additional practice for already highly busy practitioners. This thesis seeks to provide transcripts which exemplify the multimodal complexity of child-initiated play and draw out

underlying principles which may address the challenges of recognising play as learning that are faced by practitioners and multimodal researchers alike. Through the close analysis and representation in new forms demonstrated in this thesis, hitherto unnoticed aspects of child-initiated play are highlighted, prompting changes in what might routinely be given attention in the early years classroom.

The contribution of each transcript design is summarised below to highlight the key insights offered by each style and how their particular affordances support recognition of child-initiated play as meaning-making. Each transcript was carefully designed in response to the play episode it sought to represent, entailing certain gains and losses which have led to the analytical insights outlined in the preceding chapters. In this way, the choices behind transcription were informed by principled reflection upon the affordances of the particular form.

Timeline Design

The timeline transcript presented in Chapter Five was developed to represent the children's computer play after first experimenting with the effects of transcribing in more typical forms, such as orthographic, CA and tabular systems. These were found to be lacking in their emphasis on speech, the difficulty of depicting interaction with the computer and the ways these formats fragmented time. A timeline format was adopted, building on the multimodal analysis of Mondada (2007), Heath and Hindmarsh (2002) and Bezemer et al. (2011), as this enabled time to be depicted as continuous and unbroken, allowing aspects of the interaction to be shown as 'channels' unfolding over time. This enabled close scrutiny of aspects of the play (such as each child's gaze and Toby's use of the mouse) within a larger 'whole' of the episode. Colours and symbols, denoted in the key, enabled much information to be available 'at a glance' rather than being written, although this places demands on the audience to gain familiarity with the systems being used.

A further design choice was the incorporation of video stills to make available aspects such as smile and body positioning, which were not attended to as distinct 'channels'. In this way, most of the information contained in the transcript is made available visually and through spatial layout. Consequently, a timeline transcript is somewhat reminiscent of a musical score, with different components simultaneously being represented as parts of a larger whole on-going over time. Transcribing in this way drew particular attention to rhythms and patterns in the interaction, such as Toby's repeated turning and smiling to Ellie after defying her in his on-screen actions. The transcript design also enabled identification of points of intensity, such as Ellie's loud voice, her smile and gaze shifts which seemed to be used to monitor the playfulness of their exchange.

In this way, the timeline transcript offered insights into the ways in which Ellie and Toby negotiated teasing and pretence in their play, conveying the message, 'This is play' in means beyond language, through precise use of smile, gaze, body position and intonation. This revealed the play to be collaborative and multi-layered, despite their talk at first appearing argumentative. This challenges the perception of computer play as typically passive, anti-social or prone to confrontation, suggesting instead that the on-screen actions played an important part in an expanded form of symbolic play. The transcript was vital in attending to the subtleties of the interaction which may have been missed at first glance, and enabled consideration of a new game being created through the children's interaction surrounding the computer game.

Grid Design

The grid transcript presented in Chapter Six was developed to focus on the children's pretend play in an area behind bushes in the nursery garden. The transcript represents each child's talk and actions in separate columns (see also Baldry & Thibault, 2005; Bearne, 2009; Flewitt, 2005b; Lancaster, 2007) so as to recognise the part each child was playing within an overall whole. The grid design enabled the transcript to show aspects of the interaction unfolding vertically over time, whilst maintaining the quality of simultaneity. A grid system was chosen rather than a timeline owing to its clarity and the possibility to represent longer stretches of play due to condensing time into non-standardised divisions along the vertical plane.

Initially I experimented with separate columns for different modes of the various participants (e.g. Jake Action, Ben Action, Jake Talk, Ben Talk) but found this to be overly fractured and lacking clarity, particularly in the episode of aeroplane play with four participants. Instead, the columns attempt to record each child's talk (in plain text) and 'gloss' modes such as action and gaze (in italics). An advantage of such an approach is that within such a transcript, there is no blank space for participants, since they are always present and considered active, even if they are silent or still. Whilst such a transcript is helpful to the reader in terms of readability, a disadvantage of 'glossing' modes is that some detail is inevitably lost and that whilst attempting to represent the multimodality of interaction, the transcript itself can rely heavily on writing to describe each mode. Such a transcript highlights the need for balance between detail and clarity in transcription, where the analytic and rhetorical aims of the transcript may sometimes be in tension and require careful consideration of both the research audience and the research aims.

Crucially, the grid also incorporated a column diagrammatically showing the layout of the chairs the children had brought into their play space and video stills showing the children's positions in relation to the chairs. These visual additions support a clearer representation of, and closer attention to, the spatial arrangement and the children's movement, which was crucial to the episode of play. Through inclusion of video stills and diagrams in the transcript, the arrangement and rearrangement of the chairs was recognised as a significant aspect of the children's

meaning-making. This offered important insights into the ways in which the children shaped and designed their own play spaces, including their understanding of social spaces such as 'home', 'doctors' and 'aeroplane'. Through representing the simultaneous activity between many participants unfolding over time, this format is considered a particularly apt means of examining group interaction in pretend play. The column layout highlighted the parallel strands of play being improvised by Jake and Ben alongside Max and Lucas, where little spoken dialogue is occurring between the four boys, but where they were jointly creating and sustaining play scenarios multimodally on a shared theme. Transcribing within this grid design therefore supported recognition of meaning-making in an instance that might initially seem somewhat chaotic, disorganised and restless, highlighting the spatial and improvisational aspects of pretend play unfolding minutely moment-by-moment.

Comic Strip Design

The transcript presented in Chapter Seven was used to represent an episode of block play, with the design drawing upon the genre of comics and graphic novels. With established conventions for representing modes such as sound and action, the comic strip format has increasingly been used and adapted in transcription and research dissemination more generally (see Bailey, 2016; Norris, 2002; Plowman & Stephen, 2008).

As a transcription device, the comic strip layout makes visual elements central to the design, using established conventions for depicting speech (e.g. speech bubbles) and movement (e.g. arrows) superimposed on video stills. The transcript also included diagrams of the children's block structure and the toy insects to illustrate how the children were using these objects in their play. This design enabled the transcript to 'freeze frame' certain fleeting moments in the transcript whilst the overarching visual logic of the comic format ensured the reader implicitly 'joins up' the stills into a coherent unfolding. The consequence of this design is that it draws more strongly on narrative conventions than the three other transcripts, which have more ambiguous or flexible reading pathways.

This ease of readability is a strength of the comic strip design meaning it is likely to be easily accessible to an audience, including non-academic audiences. Whilst familiarity with the conventions of comics may be helpful in one respect, this may mean the design has overtones of flippancy (Plowman & Stephen, 2008) and so might not be a preferred format for all topics of research. Furthermore, it does not contain the detail or the precise depiction of time that is conveyed in other formats.

In the comic strip layout, there is an expectation that the reader will move from frame-to-frame in a left-to-right, top-to-bottom direction informed by the traditions of comics and graphic novels. This design therefore highlights the narrative aspect within the children's play, which had a

story-like unfolding with characters (captains, babies), action (going to sleep, going shopping) and plot twists (rules and counter-rules regarding the door). As they played, the children designed and re-designed their block structure, carefully co-constructing a storyline and communicating their awareness of the pretence to each other. Through its highly visual form, the comic strip design placed particular attention on the design of the children's structure, including how this design was adapted and changed over time. The comic strip layout provided a valuable means for considering how block play comprises an on-going process rather than placing emphasis on a finished product, calling into question the tendency to view and evaluate the 'finished article' rather than the on-going process of play.

Map Design

The episode of running play analysed in Chapter Eight was perhaps the most challenging to transcribe due to the rapid movement of the children over a large space. The timeline, grid and comic strip layout used in this thesis did not seem to adequately capture crucial characteristics of this fast-paced, physical play. Instead, a map design was created in order to place emphasis particularly on the children's changing placement in space over time (see also Hackett, 2014).

The transcript depicted a birds-eye view of the play space and used devices such as lines, arrows and second-by-second space marking to depict features of the movement such as direction and speed. Other modes were overlayed (e.g. speech bubbles) resulting in a transcript representing the children's trails of locomotion in their running play. However, a shortcoming of the transcript is that it is difficult to adequately capture the sequentiality and simultaneity of the movement, which a format such as an animated transcript may have been able to better capture. Whilst animated transcripts present further possibilities for representing movement, they raise challenges regarding the enduring dominance of the written page and page-like-screen in much research dissemination.

A key advantage of the map design was that it drew attention to an often problematic or ignored form of play, which may typically be considered particularly hard-to-capture or unfocused by both practitioners and researchers. Developing means to document movement in this way required the greatest departure from standard transcription conventions but was rewarded by developing a means for capturing the ephemeral nature of this play. Tracing the ephemeral in this way highlighted patterns within the children's movement such as mirroring (in direction and speed) when the children demonstrated alignment and agreement, and moments when movement served to negotiate rules and power (such as 'chase me' and 'truce'). The transcript design supported recognition that meaning-making was happening through qualities of the children's movement and that the children themselves were carefully attuned to this. The transcript design was therefore able to give value to an often-overlooked and usually hard-to-

capture aspect of play, identifying meaning-making where it may not typically be looked for or recognised.

Issues of Transcript Design

As the summaries above illustrate, each transcript in this thesis is distinctly different. This was seen as a necessity owing to the very different qualities of the selected play types (for instance, the computer-mediated play featured in Chapter Five; several children simultaneously enacting scenarios in Chapter Six; the children's on-going manipulation of small objects in Chapter Seven; the large-scale movement of the children's play in Chapter Eight). Whilst the same research questions were being asked of each case study, the forms of play were highly different from case to case, featuring modes in different ensembles, resulting in necessarily different transcripts.

The methodological aim of this thesis has been to develop apt means of representing multiple modes. As the discussion above and throughout has illustrated, these four different transcripts were carefully designed owing to the characteristics of the play extract under consideration and the affordances of the various forms of transcription. For instance, the map transcript would not have been apt for the episode of play where children were sat at the computer, nor would the timeline have been an apt representation of the children running in the chasing game. In this way, considered and principled design was key to developing forms of multimodal transcription which adequately addressed the research questions.

Each transcript was a key part of the analysis, with the choices and selections made in the transcript design stage shaping what became foregrounded. In relation to this, I have attempted reflection and transparency regarding these decisions and their effects, discussing not only the insights offered by each transcript but also the shortcomings and limitations of each design. In this way, I hope to bring into view an aspect of analysis which often occurs 'behind the scenes' and is often absent or covered only briefly in research reports (Stelma, 2009). With the lens turned centrally but critically on multimodal transcription, its worth as a research tool is highlighted alongside recognition of shortcomings and limitations.

Whilst fine-grained multimodal transcription offers particular analytical insights, this is admittedly demanding of the researcher's time. All four transcript designs, in their different ways, were time-consuming to produce. This included time considering the most suitable form of representation for the play episode under scrutiny, time researching the possible transcription formats and tools available, time to become familiar with programmes such as *ELAN* and *ComicLife* and time creating the transcripts themselves. As a result, the extracts transcribed in detail are necessarily short, carefully selected from the overall dataset to show typical instances of different play types within a nursery classroom. This invariably has its limitations, as such a

system is not feasible for large quantities of data without careful, principled sampling of shorter episodes for scrutiny. The transcripts acted as crucial analytic devices for examining play in detail and depth, turning a multimodal lens onto fleeting everyday moments, but they would be inappropriate as devices seeking to transcribe large amounts of data.

A further consideration of all four multimodal transcripts is the ethical dimension of including video stills in which the children are visible. This was chosen as an approach having explained the research and uses of data to the participants and obtaining the consent of the school, class teacher and children's parents (see Chapter Four). This was supplemented by on-going consideration of the children's own provisional voluntary informed consent (Flewitt, 2005a, 2006). Nevertheless, this is recognised as a challenging and sensitive topic in transcription (see Jewitt, 2012; Mavers, 2012). Some elect to use transcription as a means of anonymising data through effects such as face-blurring, pixelation, or recreating stills as negatives and line drawings. Others purposefully omit visual data from transcripts entirely, using transcripts as a means of anonymising participants and protecting identity through written description. In this study the children's facial expressions were a crucial part of the multimodal analysis and it was felt that including the children's faces avoided potentially 'dehumanising' effects. This was not a decision taken lightly, and was informed by on-going consideration of ethics at every stage. Nevertheless, ethics continues to be an issue for careful consideration, and one which is likely to raise new challenges and questions as digital technology makes new forms of transcription increasingly possible (e.g. extracts of video data as appendices or embedded figures).

This study has identified several contemporary challenges faced by researchers seeking to transcribe more than language, and adds to the growing body of work which recognises transcription to be more than an intermediary or preparatory practice (Ochs, 1979). This thesis seeks to make a particular contribution to the field by highlighting the insights into the multimodal richness of child-initiated play which are made possible, visible and sharable through the practice of principled multimodal transcription. Furthermore, it is hoped that the four transcripts included in the case studies, and their accompanying reflective commentary, present possibilities for others seeking to transcribe multimodally.

Whilst this study recommends diversity and principled experimentation in relation to multimodal transcription, future work may seek to propose some conventions. Questions which have not been addressed in this study, for instance, concern the possible construction of 'units of analysis' for various modes. If language is not taken as the traditional 'building blocks' for analysis (as words, as sentences etc.), future work in multimodal transcription may ask what similar or comparable 'units' may look like in forms such as movement, gesture, gaze and combinations of such modes. Further work in this area may help to provide more standardised tools and categories for multimodal transcription and analysis and support the sharing and comparison of transcripts across studies.

My key methodological recommendations, building on a growing body of work on the topic of multimodal transcription (Baldry & Thibault, 2005; Bezemer & Mavers, 2011; Flewitt, Hampel, et al., 2014; Mavers, 2012), entail recognising the partiality of all transcripts and the need to position multimodal transcription as entailing choice and variation. Arising from the methodological inquiry in this thesis, the following issues summarise central considerations for multimodal researchers:

- Acknowledging the selectivity of all transcripts
- Recognising transcription as transduction
- Considering the affordance of modes of transcription
- Experimenting with multimodal transcription design
- Making choices about transcription design principled and explicit
- Reflecting critically on these choices and their analytical and rhetorical effects
- Including transcription reflections and commentary in research reports
- Being mindful of the ethical issues entailed in different forms of transcription

These recommendations aim to reflect the diversity in multimodal transcription and the possibility of new 'hybrid' forms whilst encouraging researchers to critically and reflexively acknowledge the process of transcription as transduction, highlighting the need to ensure all transcript designs are underpinned by a sound rationale. In addition to these recommendations, this study presents four possible innovative designs for multimodal transcription, accompanied by reflections on how and why they were developed, discussion about how they were created and outlining the insights they offered in the context of this study. Through looking closely at the complex activity of child-initiated play, it is hoped these principles are demonstrated and exemplified in relation to a real-world research focus.

Developed throughout the course of this study, the recommendations above and the examples of transcription in this thesis have been used as the basis for a number of short-courses for doctoral students and early career researchers, including multiple one-day NCRM 'Multimodal Transcription' seminars and the MODE Summer School, which has since become an online self-study course. The popularity of these events has highlighted transcription as a central challenge for many researchers, and positive project evaluations suggest the recommendations above were helpful to those challenged by multimodal transcription across a wide range of fields and disciplines.

The four transcript designs developed in this thesis present possibilities for other multimodal researchers seeking to undertake similar analysis. Furthermore, it is hoped this study might support researchers to design their own transcripts based on the underpinning principles above. This complements the 'Multimodal Transcription Bank' I have developed in collaboration with

Diane Mavers and Jeff Bezemer as a resource for the MODE project (https://mode.ioe.ac.uk/category/transcription-bank). This site provides a database of multimodal transcripts accompanied by the researcher's own commentary outlining their purpose, design rationale and issues raised. It is hoped that the transcripts and commentary contained in this thesis, in addition to the Multimodal Transcription Bank resource, might further support multimodal researchers to engage with the practice of transcription creatively yet critically.

Future Directions for Multimodal Transcription

As technological developments continue to change how data are generated and handled, new possibilities and challenges for multimodal transcription continue to arise. One possible avenue for future research in multimodal transcription relates to new technologies for recording hard-to-capture 'ephemeral' modes such as movement. Research in education has begun to make use of chest-mounted Go-Pro video cameras worn by children during forest school programmes in Norway (Neegaard & Hov, 2015; see also Kindt, 2011). Such technology could add a further dimension to the research of children's movement-based play as outlined in Chapter Eight whilst also presenting new methodological considerations surrounding child-participation in digital data generation and the issue of perspective in video-research. A further area of potential future multimodal methodological enquiry could include the use of GPS trackers, worn devices enabling automatic creation of digital 'maps' of movement. Such technology has been used in health research to analyse the amount and intensity of children's outdoor play and to examine children's use of public green space, but with a focus on quantifying movement rather than considering its qualities (e.g. Lachowycz et al., 2012). GPS might prove useful within multimodal research, providing an additional means through which to visualise and examine children's movement as creative, agentive and social meaning-making. Similarly, movement capture systems (e.g. *Notch*, https://wearnotch.com) enable the recording and reconstruction of movement using sensors worn on parts of the body, providing a new means of recording and studying movement in play. Whilst this thesis examines issues inherent to transcription at a particular moment in time, on-going research is necessary in order to respond to new technologies used for generating data and the changing forms data takes.

Additional avenues for research into transcription arise from the ever-developing software for video-based research. This study made use of the digital annotation programme *ELAN* due to its versatility and its previous successful adoption by others in the multimodal research community (see Chapter Four). However, a range of other software packages are available which propose to assist with analysis and transcription of digital data (for example, *Transana, Multimodal Analysis: Video, NVivo, Atlas.ti*). Silver and Patashnik's (2011) review of Computer Assisted Qualitative Data Analysis (CAQDAS) highlights that whilst such software has several advantages, it seems to be lacking in non code-based approaches and representation of audio-

visual data in non-linear formats. Both issues are likely to be of particular significance to multimodal researchers working with video. Since the affordances of the software inevitably shape the ways in which data is selected and represented, inviting certain choices and prohibiting others, future research might critically consider the design of different software packages and outline their relative potentials and constraints for the multimodal transcription of digital data, generating useful practical advice for researchers and recommendations for CAQDAS software designers.

In addition to changing the way data is generated and handled, developments in technology also continue to change the possible formats in which multimodal transcripts might be disseminated. From an academic tradition steeped in written paper-based outputs such as journals and theses, many of the existing traditions for transcription relate to the dissemination of research on the page (or page-like-screen). As such, transcript design is often still shaped by constraints relating to the written page such as page size and orientation, resolution, limited use of colour etc. As research dissemination becomes increasingly screen-based, academic outputs may gradually move away from these traditional page-like conventions and may make greater use of digital features such as hyperlinks and embedded digital content, making research dissemination increasingly multimodal (see Ball, 2014; Gallagher & Lamb, 2016). A particular challenge encountered in my research was depicting time and sequentiality in play as static, spatial modes on the page, particularly in the children's running games (Chapter Eight). An example of emerging work in this area can be found in Duffy and Healey's (2013) diagrammatic representation of music teachers' movements around classroom spaces, animated to show movement in real time (although this was created to be presented 'live' in presentations rather than within published outputs). Such dynamic, animated 'transcripts' raise new possibilities for depicting episodes unfolding in real time.

In addition to transcribing movement, a similar challenge has been encountered in this study in attempting to represent the vibrant sounds of the children's play (for example, children's use of voices and sound effects), in transcripts which are solely visual. Whilst this has been a longstanding consideration for researchers particularly in the field of CA interested in the qualities of speech, new possibilities are gradually emerging regarding the potential for incorporating audio-visual elements into transcripts (see Lomax & Casey, 1998, for an early example of this work). Although academia generally seems slow to move away from its print-based traditions, digital dissertations and theses are becoming more common (see Andrews, 2012) and so raise new possibilities for transcript design. A future possibility might, for instance, be to include video extracts as 'digital appendices', or embedded audio-visual 'figures'. Whilst developing such dynamic audio-visual transcripts is likely to be time-consuming and demanding of the researcher's own technical capabilities, advances in software and developments in research publication may make such formats increasingly possible and prevalent. Such developments simultaneously raise new issues and challenges regarding the ethics of video-

sharing, particularly when data relates to young children, and the rhetorical status of a transcript (see Mavers, 2012). Although these suggestions of future directions are speculative, on-going developments in digital technology will require further research into the possibilities and challenges for multimodal transcription. It is hoped that the recommendations raised in this study prompt both reflection upon existing transcription practices and provide a critical foundation from which to approach new developments.

A final area for consideration in future work on multimodal transcription is the issue of naming. Given the issues raised within this thesis regarding the problematic presumed centrality of language in social research, there may be a need to re-name the practices usually referred to as 'transcription' and the artefacts typically called 'transcripts'. Originally conceived in relation to the transfer of speech into writing (hence containing the term 'script'), such a word becomes fraught when attention shifts to other modes (see also Bezemer & Mavers, 2011). Whilst conventional transcription terms are used in this thesis so as to make parallels with existing practices, such terms seem in many ways inadequate. As a development of the work in this thesis, the following has been proposed:

> We suggest that the term *transcription* can no longer serve as a general, overarching term to deal with changes in or transfers of meaning; so as the new general, overarching term we propose the term *transduction,* as it is used in social semiotic theory. (Cowan and Kress, 2017, p. 72)

Drawing the notion of 'transduction' (Kress, 1997) to the fore in the naming of such research practices might perhaps help to encapsulate the recommendations outlined above, such as inherent selectivity and the affordances of all modes of representation. Rather than 'transcripts', it may be that the products of this work become called 'documents' and the practice considered 'documentation', in that apt notational resources are used to 'document' the aspects which are crucial to particular research, where these will include multiple modes beyond 'script'. There becomes a parallel here with my proposal for 'generous pedagogical documentation' as a means of valuing and recognising the meaning-making of young children in play. Future work in the field may seek to articulate these re-namings more fully, or propose further alternatives.

Final Comments

This study has articulated a multimodal social semiotic perspective on child-initiated play and explored the necessary methodological approach such a perspective entails. It has addressed the challenge of transcription when communication is acknowledged to be about more than language. It has done so by rooting this examination of multimodal methods and methodologies within a substantive focus on child-initiated play in early years classrooms. In doing so, it is hoped that a timely and widespread methodological challenge is addressed in a real social

research context, demonstrated and debated through application and reflective commentary, whilst also contributing to current discussion of play perspectives within early years education.

This work therefore makes an original contribution to the field in two main ways. Firstly, this study identifies central considerations, challenges and potentials involved in multimodal transcription, and suggests four possible innovative forms such transcripts may take. These transcripts are accompanied by reflective commentary outlining the choices entailed in transcript design, the affordances of different formats and the particular insights their design offered. These examples highlight the inevitable transduction involved in all transcription and their role as analytic and rhetorical devices in the multimodal research process. It is hoped that this contributes to the emerging field of multimodal methodologies and provides multimodal researchers with examples, commentary and recommendations which might inform their own multimodal transcription practices across a range of disciplines. Furthermore, this study adds to the still-limited body of work which addresses the challenges raised by digital forms of data, in this instance digital video recordings, but with possible applications to the representation and analysis of other forms of audio-visual digital data. As developments in digital technologies continue to change the forms of data, as well as tools for transcription and means for dissemination available to researchers, it is hoped this thesis provides a foundation upon which to build, approaching transcription creatively yet critically.

Secondly, this study proposes that a multimodal social semiotic perspective, supported by multimodal transcription, can make evident the rich complexity of young children's meaning-making in fleeting episodes of child-initiated play, supporting a re-conceptualisation of play *as* learning. Such a perspective contrasts the dominant discourse of 'learning through play', building a case for the centrality of play in early years education at a time when play-based approaches are under increasing pressure from agendas of school-readiness, performativity and high-stakes testing. Whilst arguing for the significance of play, this thesis resists an idealised 'play ethos' and the tendency to build a case for play based on instrumentalist, developmental perspectives. Instead, this study seeks to illustrate play's importance to the players themselves through making visible detailed insights into children's multimodal meaning-making in everyday episodes of play.

The pressing issue is respectful recognition of young children as active, creative, agentive, social meaning-makers, ceaselessly making meaning in multiple modes. Carefully observing child-initiated play with committed interest and attention to children's multimodal meaning-making is a crucial priority for those interested in young children's learning. The instances of play scrutinised in this thesis highlight the complexity and richness of seemingly small and fleeting moments of play which might easily be overlooked or disregarded in busy early years classrooms. Here, the principles of recognition and representation underpinning multimodal transcription have relevance to classroom practice, raising questions about *what* gets

recognised and *how* it gets recorded both in transcription and in practitioners' observation and documentation of play. These questions are fundamental as practices undergo significant change in response to new technologies and an increasing turn towards digital forms of documentation, and at a time when early years assessment is under particular debate and scrutiny.

The findings of this thesis challenge a system of early years education which increasingly prioritises the measurement of learning above the understanding of meaning-making. It calls for a shift towards approaches and supportive policies which give value to young children's meaning-making in its many creative, diverse and surprising forms, to empower and give due respect to both children and practitioners. Without such a shift, a deficit-model of teaching and learning will continually squander the transformative capacities of meaning-makers. In contrast, this study has shown meaning where it might not usually be looked for, seen or valued, and has shown agency and design where it might not immediately be visible. This offers a contribution towards the tools and dispositions necessary for noting, noticing and so valuing meaning-making of all kinds, in all forms, by all meaning-makers.

References

2Eskimos. (2017). 2Simple: 2Build a Profile. Retrieved from http://www.2eskimos.com

Adami, E. (2009). 'We/YouTube': exploring sign-making in video-interaction. *Visual Communication*, *8*(4), 379–399. https://doi.org/10.1177/1470357209343357

Agar, M. (1996). *The Professional Stranger: An Informal Introduction to Ethnography*. New York: Academic Press.

Alderson, P., & Morrow, V. (2011). *The ethics of research with children and young people: a practical handbook* (2nd ed). London: SAGE.

Alliance for Childhood. (2009). *Crisis in the Kindergarten: Why Children Need to Play in School*. College Park, MD. Retrieved from http://www.allianceforchildhood.org/sites/allianceforchildhood.org/files/file/kindergarten_report.pdf

Andrews, R. (Ed.). (2012). *The Sage handbook of digital dissertations and theses*. Los Angeles: SAGE.

Anning, A. (2010). Play and Legislated Curriculum. In J. Moyles (Ed.), *The Excellence of Play* (pp. 19–33). Maidenhead: Open University Press.

Anning, A., & Ball, M. (Eds.). (2008). *Improving Services for Young Children: From Sure Start to Children's Centres*. Los Angeles: SAGE.

Arizpe, E., & Styles, M. (2016). *Children reading picturebooks: interpreting visual texts* (Second edition). London ; New York, NY: Routledge.

Armstrong, M. (1980). *Closely Observed Children*. London: Writers and Readers Press.

Arnold, C. (2015). *Doing your child observation study: a step-by-step guide*. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=1099334

Athey, C. (2007). *Extending thought in young children: a parent-teacher partnership* (2nd ed). Thousand Oaks, CA: PCP/Sage Publications.

Bailey, C. (2016). Free the sheep: improvised song and performance in and around a minecraft community: Free the sheep. *Literacy*, *50*(2), 62–71. https://doi.org/10.1111/lit.12076

Bakhtin, M. (1986). *Speech Genres and Other Late Essays*. Austin, TX: University of Texas Press.

Baldry, A., & Thibault, P. J. (2005). *Multimodal Transcription and Text Analysis*. London: Equinox.

Ball, C. E. (2014). Multimodal revision techniques in webtexts. *Classroom Discourse*, *5*(1), 91–105. https://doi.org/10.1080/19463014.2013.859844

Ball, S. J. (2008). *The education debate*. Bristol: Policy Press.

Banks, M. (2001). *Visual Methods in Social Research*. London: SAGE.

Barthes, R. (1977). Rhetoric of the image. In R. Barthes & S. Heath (Eds.), *Image Music Text* (pp. 32–51). London: Fontana.

Bateman, J. A. (2011). *Multimodality and genre: a foundation for the systematic analysis of multimodal documents* (1. paperback ed). Basingstoke, Hampshire: Palgrave Macmillan.

Bateson, G. (1956). A Theory of Play and Fantasy. In K. Salen & E. Zimmerman (Eds.), *The Game Design Reader*. Cambridge, MA: MIT Press.

Bayley, R., & Featherstone, S. (2013). *Supporting child-initiated learning* (New edition). London: Featherstone.

Bearne, E. (2009). Multimodality, literacy and texts: Developing a discourse. *Journal of Early Childhood Literacy*, *9*(2), 156–187. https://doi.org/10.1177/1468798409105585

Bernstein, B. (1975). Class and Pedagogies: Visible and Invisible. *Educational Studies*, *1*(1), 23–41. https://doi.org/10.1080/0305569750010105

Bezemer, J. (2008). Displaying orientation in the classroom: Students' multimodal responses to teacher instructions. *Linguistics and Education*, *19*(2), 166–178. https://doi.org/10.1016/j.linged.2008.05.005

Bezemer, J. (2012). How to Transcribe Multimodal Interaction? (draft chapter). In C. D. Maier & S. Norris, *Texts, Images and Interaction: A Reader in Multimodality*.

Bezemer, J., & Jewitt, C. (2010). Multimodal Analysis. In L. Litosseliti (Ed.), *Research Methods in Linguistics* (pp. 180–197). London: Continuum.

Bezemer, J., & Kress, G. (2016). *Multimodality, learning and communication: a social semiotic frame*. London ; New York: Routledge, Taylor & Francis Group.

Bezemer, J., & Mavers, D. (2011). Multimodal transcription as academic practice: a social semiotic perspective. *International Journal of Social Research Methodology*, *14*(3), 191–206.

Bezemer, J., Murtagh, G., Cope, A., Kress, G., & Kneebone, R. (2011). 'Scissors, Please': The Practical Accomplishment of Surgical Work in the Operating Theater. *Symbolic Interaction*, *34*(3), 398–414. https://doi.org/10.1525/si.2011.34.3.398

Bird, C. M. (2005). How I Stopped Dreading and Learned to Love Transcription. *Qualitative Inquiry*, *11*(2), 226–248. https://doi.org/10.1177/1077800404273413

Blurton-Jones, N. (1967). An ethological study of some aspects of social behaviour of children in nursery school. In D. R. Morris (Ed.), *Primate Ethology*. London: Weidenfeld & Nicolson.

Boardman, M. (2007). 'I know how much this child has learned. I have proof!' Employing digital technologies for documentation processes in kindergarten. *Australian Journal of Early Childhood*, *32*(3), 59–66.

Bradbury, A. (2013). Education policy and the 'ideal learner': producing recognisable learner-subjects through early years assessment. *British Journal of Sociology of Education*, *34*(1), 1–19. https://doi.org/10.1080/01425692.2012.692049

Bradbury, A., & Roberts-Holmes, G. (2017). *The datafication of primary and early years education: playing with numbers*. Abingdon, Oxon ; New York, NY: Routledge.

British Association for Early Childhood Education. (2012). *Development matters in the Early Years Foundation Stage (EYFS)*. London: British Association for Early Childhood Education.

British Educational Research Association. (2011). *BERA Ethical Guidelines for Educational Research*. BERA.

Broadhead, P. (Ed.). (1996). *Researching the Early Years Continuum*. Clevedon ; Philadelphia: Multilingual Matters.

Broadhead, P. (2010). Cooperative Play and Learning from Nursery to Year One. In P. Broadhead, J. Howard, & E. Wood, *Play and Learning in the Early Years* (pp. 43–59). London: Sage.

Broadhead, P., Wood, E., & Howard, J. (2010). Understanding Playful Learning and Playful Pedagogies - Towards a New Research Agenda. In P. Broadhead, J. Howard, & E.

Wood (Eds.), *Play and Learning in the Early Years* (pp. 177–185). London: SAGE Publications.

Bronfenbrenner, U. (1979). *The Ecology of Human Development: Experiments by Nature and Design*. Cambridge, Mass: Harvard University Press.

Bronfenbrenner, U., & Morris, P. (1998). The ecology of developmental processes. In R. M. Lerner (Ed.), *Theorectical Models of Human Development* (pp. 993–1028). New York: Wiley.

Brooker, L., & Siraj-Blatchford, J. (2002). 'Click on Miaow!': how children of three and four years experience the nursery computer. *Contemporary Issues in Early Childhood*, *3*(2), 251–273.

Bruce, T. (2011). *Learning Through Play* (2nd ed). London: Hodder Education.

Brunton, P., & Thornton, L. (2009). *Understanding the Reggio appproach* (2nd ed). London ; New York: Routledge.

Bryman, A. (2006). Paradigm peace and the implications for quality. *International Journal of Social Research Methodology*, *9*(2), 111–126.

Bucholtz, M. (2000). The politics of transcription. *Journal of Pragmatics*, *32*(10), 1439–1465. https://doi.org/10.1016/S0378-2166(99)00094-6

Burawoy, M. (2009). *The Extended Case Method*. Berkeley, CA: University of California Press.

Burke, A. M., & Marsh, J. (Eds.). (2013). *Children's virtual play worlds: culture, learning, and participation*. New York: Peter Lang.

Burn, A. (2011). *Children's Playground Games and Songs in the New Media Age - End of Project Report*.

Burn, A. (2013). The kineikonic mode:Towards a multimodal approach to moving image media. *National Centre for Research Methods Working Paper*. Retrieved from http://eprints.ncrm.ac.uk/3085/1/KINEIKONIC_MODE.pdf

Burn, A., & Parker, D. (2003). *Analysing media texts*. London ; New York: Continuum.

Carr, M., & Lee, W. (2012). *Learning Stories: Constructing Learner Identities in Early Education*. London: SAGE.

Clark, A. (2006). Anonymising research data. *NCRM Working Paper Series*. Retrieved from http://eprints.ncrm.ac.uk/480/1/0706_anonymising_research_data.pdf

Clark, A. (2011). Multimodal map making with young children: exploring ethnographic and participatory methods. *Qualitative Research*, *11*(3), 311–330. https://doi.org/10.1177/1468794111400532

Clark, A., McQuail, S., & Moss, P. (2003). *Exploring the field of listening to and consulting with young children*. Nottingham: DfES Publications.

Coates, J., & Thornborrow, J. (1999). Myths, Lies and Audiotapes: Some Thoughts on Data Transcripts. *Discourse & Society*, *10*(4), 594–597. https://doi.org/10.1177/0957926599010004015

Cochran-Smith, M., & Lytle, S. L. (1993). *Inside/Outside Teacher Research and Knowledge*. New York: Teachers College Press.

Cohen, D. (2006). *The development of play* (3rd ed). London ; New York: Routledge.

Cohen, L., & Uhry, J. (2007). Young Children's Discourse Strategies During Block Play: A Bakhtinian Approach. *Journal of Research in Childhood Education*, *21*(3), 302–315.

Cohen, L., & Uhry, J. (2011). Naming Block Structures: A Multimodal Approach. *Early Childhood Education Journal*, *39*, 79–87.

Connelly, F. M., & Clandinin, D. J. (1990). Stories of Experience and Narrative Inquiry. *Educational Researcher*, *19*(5), 2–14.

Cooper, N., & Stevenson, C. (1997). Qualitative and Quantitative Research. *The Psychologist*, *10*(4), 159–162.

Corsaro, W. A. (1986). Discourse processes within peer culture: From a constuctivist to an interpretative approach to childhood socialization. In P. Adler (Ed.), *Sociological Studies of Child Development* (pp. 81–101). New York: JAI Press.

Counsell, C. (2009). Interpretivism: meeting ourselves in research. In E. Wilson (Ed.), *School-Based Research*. London: SAGE.

Cowan, K. (2010). *Using the Reggio Emilia concept of 'a hundred languages' to explore young children's multimodal communication and meaning-making with natural and open-ended materials.* University of Cambridge, Cambridge.

Cowan, K. (2014a). Multimodal transcription of video: examining interaction in Early Years classrooms. *Classroom Discourse*, *5*(1), 6–21. https://doi.org/10.1080/19463014.2013.859846

Cowan, K. (2014b). Multimodality: Observing and Documenting with Video in Nursery. *The Early Education Journal*, *74*.

Cowan, K., & Kress, G. (2017). Documenting and transferring meaning in the multimodal world: reconsidering 'transcription'. In F. Serafini & E. Gee (Eds.), *Remixing Multiliteracies: Theory and Practice from New London to New Times* (pp. 50–61). New York: Teachers College Press.

Craft, A. (2002). *Creativity and early years education: a lifewide foundation*. London: Continuum. Retrieved from http://site.ebrary.com/id/10488195

Crescenzi, L., Jewitt, C., & Price, S. (2014). The role of touch in preschool children's learning using iPad versus paper interaction. *Australian Journal of Language and Literacy*, *37*(2), 86–95.

Crotty, M. (1998). *The foundations of social research: meaning and perspective in the research process*. London ; Thousand Oaks, Calif: Sage Publications.

Dahlberg, G., & Moss, P. (2004). *Ethics and politics in early childhood education*. New York: RoutledgeFalmer.

Dahlberg, G., Moss, P., & Pence, A. (2013). Pedagogical Documentation: A Practice for Reflection and Democracy. In *Beyond Quality in Early Childhood Education and Care* (pp. 144–158). London: Routledge. Retrieved from http://files.eric.ed.gov/fulltext/ED433943.pdf

Dahlberg, G., Moss, P., & Pence, A. R. (1999). *Beyond quality in early childhood education and care: postmodern perspectives*. London ; Philadelphia, PA: Falmer Press.

Davidson, C. (2009). Transcription: Imperatives for Qualitative Research. *International Journal of Qualitative Methods*, *8*(2), 35–52.

Denzin, N. (1983). Interpretive Interactionism. In G. Morgan (Ed.), *Beyond Method: Strategies for Social Research*. Beverly Hills, CA: SAGE.

Denzin, N. (1989). *Interpretive biography*. London: SAGE.

Denzin, N., & Lincoln, Y. S. (Eds.). (2000). *Handbook of qualitative research* (2nd ed). Thousand Oaks, Calif: Sage Publications.

Department for Education. (2014). *The National Curriculum in England: Framework Document*. Department for Education.

Department for Education. (2017). *Statutory Framework for the Early Years Foundation Stage: Setting the standards for learning, development and care for children from birth to five*. Department for Education.

DeZutter, S. (2007). Play as Group Improvisation: A Social Semiotic, Multimodal Perspective on Play and Literacy. In O. Saracho & B. Spodek, *Contemporary Perspecitves on Social Learning in Early Childhood Education* (pp. 217–241). Charlotte, NC: Information Age Publishing.

Dicks, B., Flewitt, R., Lancaster, L., & Pahl, K. (2011). Multimodality and ethnography: working at the intersection. *Qualitative Research*, *11*(3), 227–237. https://doi.org/10.1177/1468794111400682

Dicks, B., Soyinka, B., & Coffey, A. (2006). Multimodal ethnography. *Qualitative Research*, *6*(1), 77–96. https://doi.org/10.1177/1468794106058876

Domingo, M. (2011). Analyzing layering in textual design: a multimodal approach for examining cultural, linguistic, and social migrations in digital video. *International Journal of Social Research Methodology*, *14*(3), 219–230. https://doi.org/10.1080/13645579.2011.563619

Dowling, P. (2004). Mythologising and organising. *Online Paper*. Retrieved from http://www.pauldowling.me/publications/mo/index.htm

Drummond, M. J. (1994). *Learning to See: Assessment Through Observation*. York: Stenhouse Publishers.

Drummond, M. J. (2003). *Assessing Children's Learning - Second Edition*. Abingdon: Routledge.

Du Bois, J. W. (1991). Transcription Design Principles for Spoken Discourse Research. *Pragmatics*, *1*(1), 71–106.

Duffy, S., & Healey, P. G. T. (2013). Using Music as a Turn in Conversation in a Lesson. In *Proceedings of the 35th Annual Conference of the Cognitive Science Society* (pp. 2231–2236). Berlin.

Duranti, A. (2006). Transcripts, Like Shadows on a Wall. *Mind, Culture, and Activity*, *13*(4), 301–310. https://doi.org/10.1207/s15327884mca1304_3

Duranti, A., & Goodwin, C. (Eds.). (1992). *Rethinking context: language as an interactive phenomenon*. Cambridge [England] ; New York: Cambridge University Press.

Edwards, C. P., Gandini, L., & Forman, G. E. (Eds.). (1998). *The hundred languages of children: the Reggio Emilia approach--advanced reflections* (2nd ed). Greenwich, Conn: Ablex Pub. Corp.

Erickson, F. (1992). Ethnographic microanalysis of interaction. In M. D. LeCompte, W. M. Millroy, & J. Preissle (Eds.), *The Handbook of Qualitative Research in Education* (pp. 201–225). London: Academic Press.

Erickson, F. (1996). Going for the zone: the social and cognitive ecology of teacher-student interaction in classroom conversations. In D. Hicks (Ed.), *Discourse, Learning and Schooling* (pp. 29–62). Cambridge: Cambridge University Press.

Erickson, F. (2011). Uses of video in social research: a brief history. *International Journal of Social Research Methodology*, *14*(3), 179–189. https://doi.org/10.1080/13645579.2011.563615

Erickson, F., & Shultz, J. J. (1982). *The counselor as gatekeeper: social interaction in interviews*. New York: Academic Press.

Falthin, A. (2015). *Affordance and choice: performing music in lower secondary school*. Stockholm; Lund: Kungliga musikhögskolan ; Lunds universitet.

Feagin, J. R., Orum, A. M., & Sjoberg, G. (1991). *A Case for the Case Study*. Chapel Hill: University of North Carolina Press.

Filippini, T., & Vecchi, V. (Eds.). (2000). *The Hundred Languages of Children*. Reggio Emilia: Reggio Children.

Flewitt, R. (2005a). Conducting research with young children: some ethical considerations. *Early Child Development and Care*, *175*(6), 553–565. https://doi.org/10.1080/03004430500131338

Flewitt, R. (2005b). Is every child's voice heard? Researching the different ways 3-year-old children communicate and make meaning at home and in a pre-school playgroup. *Early Years*, *25*(3), 207–222. https://doi.org/10.1080/09575140500251558

Flewitt, R. (2006). Using video to investigate preschool classroom interaction: education research assumptions and methodological practices. *Visual Communication*, *5*, 25–50.

Flewitt, R. (2010). *Multimodal Literacies in the Early Years*. Retrieved from http://www.open.ac.uk/creet/main/sites/www.open.ac.uk.creet.main/files/04%20Multimodal%20Literacy.pdf

Flewitt, R. (2011). Bringing ethnography to a multimodal investigation of early literacy in a digital age. *Qualitative Research*, *11*(3), 293–310. https://doi.org/10.1177/1468794111399838

Flewitt, R., Hampel, R., Hauck, M., & Lancaster, L. (2014). What are multimodal data and transcription? In C. Jewitt (Ed.), *The Routledge Handbook of Multimodal Analysis* (pp. 44–59). London: Routledge.

Flewitt, R., Kucirkova, N., & Messer, D. (2014). Touching the virtual, touching the real: iPads and enabling literacy for students experiencing disability, *37*(2), 107–116.

Freeman, N. K., & Brown, M. H. (2004). Reconceptualizing rough and tumble play: Ban the banning. In S. Reifel & M. Brown (Eds.), *Social Contexts of Early Education, and Reconceptualizing Play (II): Volume 13: Advances in Early Education and Day Care* (pp. 219–234). Bingley: Emerald Group Publishing.

Froebel, F. (1895). *Friedrich Froebel's pedagogics of the kindergarten: or, his ideas concerning the play and playthings of the child*. Gran Rapids, Mich.: Froebel Foundation USA. Retrieved from http://books.google.com/books?id=2qVGAQAAMAAJ

Frost, J. L. (2010). *A history of children's play and play environments: toward a contemporary child-saving movement*. New York: Routledge.

Gage, N. (1989). The paradigm wars and their aftermath. *Educational Researcher*, *18*, 4–10.

Gallagher, M., & Lamb, J. (2016). Open Digital Practices. In M. A. Peters (Ed.), *Encyclopedia of Educational Philosophy and Theory*. Berlin: Springer.

Garcez, P. M. (1997). Microethnography. In N. H. Hornberger & D. Corson (Eds.), *Encyclopedia of Language and Education* (pp. 187–196). Dordrecht: Springer Netherlands. https://doi.org/10.1007/978-94-011-4535-0_18

Garfinkel, H. (1984). *Studies in Ethnomethodology*. Cambridge, UK: Polity Press.

Garrick, R., Bath, C., Dunn, K., Maconochie, H., Willis, B., & Wolstenholme, C. (2010). *Children's Experiences of the Early Years Foundation Stage* (No. DFE-RR071). Department for Education.

Garvey, C. (1977). *Play*. London: Open Books.

Gaskins, S. (2014). Children's Play as Cultural Activity. In L. Brooker, M. Blaise, & S. Edwards (Eds.), *The Sage Handbook of Play and Learning in Early Childhood* (pp. 31–42). London: SAGE Publications.

Gaskins, S., Haight, W., & Lancy, D. F. (2007). The Cultural Construction of Play. In A. Göncü & S. Gaskins (Eds.), *Play and Development: Evolutionary, Sociocultural, and Functional Perspectives* (pp. 179–202). Mahwah, NJ: Erlbaum.

Geertz, C. (1973). *The interpretation of cultures: selected essays*. New York: Basic Books.

Genishi, C., & Haas Dyson, A. (2014). Play as the Precursor for Literacy Development. In E. Brooker, M. Blaise, & S. Edwards (Eds.), *The Sage Handbook of Play and Learning in Early Childhood* (1st edition, pp. 228–251). Thousand Oaks, CA: SAGE Publications.

Gillen, J., & Cameron, C. A. (2017). Negotiating citizenship: a young child's collaborative meaning-making constructions of beavers as a symbol of Canada. *Language and Education*, *31*(4), 330–350. https://doi.org/10.1080/09500782.2017.1302466

Giudici, C., & Barchi, P. (Eds.). (2011). *Making learning visible: children as individual and group learners ; RE PZ* (5. printing). Reggio Emilia: Reggio Children.

Goffman, E. (1959). *The Presentation of Self in Everyday Life*. London: Penguin.

Goffman, E. (1986). *Frame analysis: an essay on the organization of experience* (Northeastern University Press ed). Boston: Northeastern University Press.

Goodwin, C. (1981). *Conversational organization: interaction between speakers and hearers*. New York: Academic Press.

Goodwin, C. (1994). Professional Vision. *American Anthropologist*, *96*(3), 606–633.

Goodwin, C. (2000). Action and embodiment within situated human interaction. *Journal of Pragmatics*, *32*, 1489–1522.

Goouch, K. (2010). Permission to play. In J. Moyles (Ed.), *The Excellence of Play* (pp. 53–66). Maidenhead: Open University Press.

Green, J., & Bloome, D. (1997). Ethnography and ethnographers of and in education: A situated perspective. In J. Flood, S. Heath, & D. Lapp (Eds.), *Handbook of research on teaching literacy through the communicative and visual arts.* (pp. 181–202). New York: Macmillan.

Green, J., Franquiz, M., & Dixon, C. (1997). The Myth of the Objective Transcript: Transcribing as a Situated Act. *TESOL Quarterly*, *31*(1), 172–176.

Gregory, E., & Ruby, M. (2011). The 'insider/outsider' dilemma of ethnography: Working with young children and their families in cross-cultural contexts. *Journal of Early Childhood Research*, *9*(2), 162–174. https://doi.org/10.1177/1476718X10387899

Guanella, F. M. (1934). *Block Building Activities of Young Children*. New York: Columbia University.

Gura, P., Bruce, T., & Froebel Blockplay Research Group (Eds.). (1992). *Exploring learning: young children and blockplay*. London: P. Chapman Pub.

Hackett, A. (2014). Zigging and zooming all over the place: Young children's meaning making and movement in the museum. *Journal of Early Childhood Literacy*, *14*(1), 5–27. https://doi.org/10.1177/1468798412453730

Halliday, M. A. K. (1978). *Language as social semiotic: the social interpretation of language and meaning* (9. impr). London: Arnold.

Hammersley, M. (1993). On the teacher as researcher. In *Educational Research: Current Issues*. London: Paul Chapman & OU.

Hammersley, M. (2008). *Questioning qualitative inquiry: critical essays*. Los Angeles ; London: SAGE.

Hammersley, M., & Atkinson, P. (2007). *Ethnography: principles in practice* (3rd ed). London ; New York: Routledge.

Hancock, R., & Gillen, J. (2007). Safe Places in Domestic Spaces: Two-Year-Olds at Play in their Homes. *Children's Geographies*, *5*(4), 337–351. https://doi.org/10.1080/14733280701631775

Harris, P. (2000). *The Work of the Imagination*. Oxford: Blackwell.

Heath, C., & Hindmarsh, J. (2002). Analysing Interaction: Video, ethnography and situated conduct. In T. May (Ed.), *Qualitative Research in Action* (pp. 99–121). London: SAGE.

Heath, C., Hindmarsh, J., & Luff, P. (2010). *Video in qualitative research: analysing social interaction in everyday life*. Los Angeles: SAGE.

Heath, S. B., & Street, B. V. (2008). *On ethnography: approaches to language and literacy research*. New York: Teachers College Press : NCRLL/National Conference on Research in Language and Literacy.

Hobart, C., & Frankel, J. (2004). *A Practical Guide to Child Observation and Assessment*. Cheltenham: NelsonThornes.

Hodge, B., & Kress, G. R. (1988). *Social semiotics*. Cambridge, UK: Polity Press in association with Basil Blackwell, Oxford, UK.

Hodge, B., & Kress, G. R. (1993). *Language as ideology* (2nd ed). London ; New York: Routledge.

Hofstadter, D. (1985). *Metamagical Themas.* Basic Books. Retrieved from http://www.myilibrary.com?id=965686

Hughes, B. (2006). *Playtypes: speculations and possibilities*. London: London Centre for Playwork, Education and Training.

Huizinga, J. (1949). *Homo Ludens: A Study of the Play-Element in Culture*. London; Boston, Mass.: Routledge and Kegan Paul. Retrieved from http://art.yale.edu/file_columns/0000/1474/homo_ludens_johan_huizinga_routledge_1949_.pdf

Hurdley, R., & Dicks, B. (2011). In-between practice: working in the 'thirdspace' of sensory and multimodal methodology. *Qualitative Research*, *11*(3), 277–292. https://doi.org/10.1177/1468794111399837

Ideland, J. (2013). Musically skilled gamers' use and expressions of knowledge of music and music making when playing Guitar Hero. In E. Christiansen, L. Kuure, A. Mørch, & B. Lindström (Eds.), *Problem-based learning for the 21st century: New Practices and Learning Environments* (pp. 337–363). Aalborg, Denmark: Aalborg University Press.

James, A., & Prout, A. (Eds.). (1997). *Constructing and reconstructing childhood: contemporary issues in the sociological study of childhood*. London ; Washington, D.C: Falmer Press.

Janesick, V. J. (2000). The choreography of qualitative research design: minuets, improvisations, and crystallization. In N. Denzin & Y. Lincoln (Eds.), *Handbook of Qualitative Research*. London: SAGE.

Jarvis, P. (2010). 'Born to Play': The Biocultural Roots of Rough and Tumble Play, and its Impact Upon Young Children's Learning and Development. In P. Broadhead, J. Howard, & E. Wood (Eds.), *Play and Learning in the Early Years* (pp. 61–77). London: SAGE Publications.

Jefferson, G. (2004). Glossary of transcript symbols with an introduction. In G. H. Lerner (Ed.), *Conversation Analysis: Studies from the First Generation* (pp. 13–31). Amsterdam: John Benjamins.

Jenks, C. (Ed.). (2006). *The sociology of childhood: essential readings* (Reprinted). Aldershot: Ashgate.

Jewitt, C. (2012). An introduction to using video for research. Presented at the NCRM Working Paper, Unpublished.

Jewitt, C. (Ed.). (2014). *The Routledge Handbook of Multimodal Analysis* (Second Edition). Milton Park, Abingdon, Oxon: Routledge.

Jewitt, C., Bezemer, J., & O'Halloran, K. L. (2016). *Introducing multimodality*. London ; New York: Routledge.

Kalantzis, M., & Cope, B. (2013). On Transformation: Reflections on the work of, and working with, Gunther Kress. In *Multimodality and Social Semiosis: Communication, Meaning-Making and Learning in the Work of Gunther Kress* (pp. 16–29). New York: Routledge.

Karpatschof, B. (2013). Play, But Not Simply Play: The Anthropology of Play. In I. Schousboe & D. Winther-Lindqvist (Eds.), *Children's Play and Development - Cultural-Historical Perspectives* (pp. 251–264). Dordrecht: Springer Netherlands.

Kendon, A. (1990). *Conducting interaction: patterns of behavior in focused encounters*. Cambridge ; New York: Cambridge University Press.

Kendrick, M. (2005). Playing house: A sideways glance at literacy and identity in early childhood. *Journal of Early Childhood Literacy*, *5*(1), 5–28.

Kernan, M. (2014). Opportunities and Affordances in Outdoor Play. In L. Brooker, M. Blaise, & S. Edwards (Eds.), *The Sage Handbook of Play and Learning in Early Childhood* (pp. 391–402). London: SAGE Publications Ltd.

Kindt, D. (2011). Seeing through the eyes of the students: First impressions of recording in the classroom with a GoPro® head-mounted camcorder. *Academic Journal of the School of Contemporary International Studies*, *11*, 179–199.

Kissmann, U. (Ed.). (2009). *Video Interaction Analysis*. Frankfurt: Peter Lang.

Kjällander, S. (2011). *Designs for learning in an extended digital environment case studies of social interaction in the social science classroom*. Stockholm: Department of Education, Stockholm University.

Knoblauch, H., Schnettler, B., & Raab, J. (2006). Video Analysis - Methodological Aspects of Interpretive Audiovisual Analysis in Social Research. In H. Knoblauch, B. Schnettler, J. Raab, & H.-G. Soeffner (Eds.), *Video Analysis: Methodology and Methods* (pp. 9–26). Frankfurt: Peter Lang.

Korkiakangas, T. (2014). Challenges in archiving and sharing video data: Considering moral, pragmatic, and substantial arguments. *Journal of Research Practice*, *10*(1), Article M3.

Kress, G. (1997). *Before writing: rethinking the paths to literacy*. London ; New York: Routledge.

Kress, G. (2005). Gains and losses: New forms of texts, knowledge, and learning. *Computers and Composition*, *22*(1), 5–22. https://doi.org/10.1016/j.compcom.2004.12.004

Kress, G. (2010). *Multimodality: a social semiotic approach to contemporary communication*. London ; New York: Routledge.

Kress, G. (2011). 'Partnerships in research': multimodality and ethnography. *Qualitative Research*, *11*(3), 239–260. https://doi.org/10.1177/1468794111399836

Kress, G. (2014). What is a Mode? In C. Jewitt (Ed.), *The Routledge Handbook of Multimodal Analysis* (pp. 60–75). London: Routledge.

Kress, G., & Cowan, K. (2017). From making meaning to meaning-making with writing: Reflecting on four-year-olds at play / Fra at skabe mening til meningsskabelse med skrivning: Refleksioner over børns leg. In D. Østergren-Olsen & K. Friis Larsen (Eds.), *Literacy and Learning in Primary School / Literacy og læringsmål I indskolingen*. Copenhagen: Dafolo.

Kress, G., Jewitt, C., Bourne, J., Franks, A., Hardcastle, J., Jones, K., & Reid, E. (Eds.). (2005). *English in urban classrooms: a multimodal perspective on teaching and learning*. London ; New York, NY: RoutledgeFalmer.

Kress, G., & Van Leeuwen, T. (2001). *Multimodal discourse: the modes and media of contemporary communication*. London : New York: Arnold ; Oxford University Press.

Kress, G., & Van Leeuwen, T. (2006). *Reading Images: The grammar of visual design* (2nd Edition). London: Routledge Falmer.

Kucirkova, N. (2014). iPads in early education: separating assumptions and evidence. *Frontiers in Psychology*, *5*. https://doi.org/10.3389/fpsyg.2014.00715

Kuhn, T. S. (1996). *The structure of scientific revolutions* (3rd ed). Chicago, IL: University of Chicago Press.

Lachowycz, K., Jones, A. P., Page, A. S., Wheeler, B. W., & Cooper, A. R. (2012). What can global positioning systems tell us about the contribution of different types of urban greenspace to children's physical activity? *Health & Place*, *18*(3), 586–594. https://doi.org/10.1016/j.healthplace.2012.01.006

Lancaster, L. (2001). Staring at the Page: The Functions of Gaze in a Young Child's Interpretation of Symbolic Forms. *Journal of Early Childhood Literacy*, *1*(2), 131–152. https://doi.org/10.1177/14687984010012001

Lancaster, L. (2007). Representing the ways of the world: How children under three start to use syntax in graphic signs. *Journal of Early Childhood Literacy*, *7*(2), 123–154.

Lapadat, J. C. (2000). Problematizing transcription: Purpose, paradigm and quality. *International Journal of Social Research Methodology*, *3*(3), 203–219. https://doi.org/10.1080/13645570050083698

Lapadat, J. C., & Lindsay, A. C. (1999). Transcription in Research and Practice: From Standardization of Technique to Interpretive Positionings. *Qualitative Inquiry*, *5*(1), 64–86. https://doi.org/10.1177/107780049900500104

Learning Book. (2016). *Your Definitive Guide to Choosing the Right Digital Learning Journey*. Retrieved from http://www.learningbook.co.uk

Lemke, J. L. (1998). Metamedia literacy: Transforming meanings and media. In D. Reinking, M. McKenna, L. Labbo, & Kieffer (Eds.), *Handbook of Literacy and Technology* (pp. 283–302). Mahwah, NJ: Erlbaum.

Leontyev, A. N. (1981). *The Development of Mind: Selected Works*. (M. Cole, Ed.). Pacifica, CA: Marxists Internet Archive.

Lester, S., & Russell, W. (2008). *Play for a change: play, policy, and practice: a review of contemporary perspectives*. London [England]: Play England : National Children's Bureau.

Lester, S., & Russell, W. (2010). *Children's Right to Play*.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, Calif: Sage Publications.

Lindgren, A.-L. (2012). Ethical Issues in Pedagogical Documentation: Representations of Children Through Digital Technology. *International Journal of Early Childhood*, *44*(3), 327–340. https://doi.org/10.1007/s13158-012-0074-x

Locke, J. (2017). Some Thoughts Concerning Education. In *The Complete Works of John Locke*. Hastings: Delphi Publishing Ltd.

Lomax, H., & Casey, N. (1998). Recording Social Life: Reflexivity and Video Methodology. *Sociological Research Online*, *3*(2).

Louv, R. (2010). *Last child in the woods: saving our children from nature-deficit disorder* (Rev. and updated). London: Atlantic Books.

Luckmann, T. (2006). Some Remarks on Scores in Multimodal Sequential Analysis. In *Video Analysis: Methodology and Methods* (pp. 29–34). Frankfurt: Peter Lang.

Lupton, D., & Williamson, B. (2017). The datafied child: The dataveillance of children and implications for their rights. *New Media & Society*, *19*(5), 780–794. https://doi.org/10.1177/1461444816686328

Mackey, M. (2007). *Literacies Across Media*. London and New York: Routledge.

MacLean, L. M., Meyer, M., & Estable, A. (2004). Improving Accuracy of Transcripts in Qualitative Research. *Qualitative Health Research*, *14*(1), 113–123. https://doi.org/10.1177/1049732303259804

Malaguzzi, L. (1993). A Charter of Rights. In T. Filippini & V. Vecchi (Eds.), *The Hundred Languages of Children: Narrative of the Possible*. Reggio Emilia, Italy: Reggio Children.

Marsh, J. (Ed.). (2005). *Popular culture, new media and digital literacy in early childhood*. London ; New York: RoutledgeFalmer.

Marsh, J., & Bishop, J. C. (2014). *Changing play: play, media and commercial culture from the 1950s to the present day*. Maidenhead: Open Univ. Press.

Marsh, J., Plowman, L., Yamada-Rice, D., Bishop, J., & Scott, F. (2016). Digital play: a new classification. *Early Years*, *36*(3), 242–253. https://doi.org/10.1080/09575146.2016.1167675

Mason, S. (1996). *Qualitative Researching*. London: SAGE.

Mavers, D. (2009). Student text-making as semiotic work. *Journal of Early Childhood Literacy*, *9*(2), 141–155. https://doi.org/10.1177/1468798409105584

Mavers, D. (2011). *Children's drawing and writing: the remarkable in the unremarkable*. New York: Routledge.

Mavers, D. (2012). Transcribing Video. *National Centre for Research Methods Working Paper*. Retrieved from http://eprints.ncrm.ac.uk/2877/4/NCRM_working_paper0512.pdf

Maxwell, J. A. (1998). Designing a qualitative study. In L. Bickman & D. J. Rog (Eds.), *Handbook of Applied Social Research Methods*. London: SAGE.

McCloud, S. (1994). *Understanding Comics*. New York: HarperPerennial.

McDermott, R. P., Gospodinoff, K., & Aron, J. (1978). Criteria for an Ethnographically Adequate Description of Concerted Activities and their Contexts. *Semiotica*, *24*(3–4). https://doi.org/10.1515/semi.1978.24.3-4.245

McInnes, K., Howard, J., Miles, G., & Crowley, K. (2011). Differences in practitioners' understanding of play and how this influences pedagogy and children's perceptions of play. *Early Years*, *31*(2), 121–133. https://doi.org/10.1080/09575146.2011.572870

McWhinney, B. (2000). *The CHILDES project: Tools for analyzing talk*. Mahwah, NJ: Erlbaum.

Mehan, H. (1979). *Learning lessons: social organization in the classroom*. Cambridge, Mass: Harvard University Press.

Merchant, G., Gillen, J., Marsh, J., & Davies, J. (Eds.). (2013). *Virtual literacies: interactive spaces for children and young people*. New York, NY: Routledge.

Mills, J., & Birks, M. (2011). *Qualitative methodology: a practical guide* (1st edition). Thousand Oaks, CA: Sage Publications.

MODE. (2017). MODE: Multimodal Methodologies for Researching Digital Data and Environments. Retrieved from https://mode.ioe.ac.uk

Mondada, L. (2007). Commentary: transcript variations and the indexicality of transcribing practices. *Discourse Studies*, *9*(6), 809–821.

Mondada, L. (2011). The organisation of concurrent courses of action in surgical demonstrations. In J. Streeck, C. Goodwin, & C. LeBaron (Eds.), *Embodied Interaction. Language and Body in the Material World* (pp. 207–226). Cambridge: Cambridge University Press.

Moore, D., Edwards, S., Cutter-Mackenzie, A., & Boyd, W. (2014). Play-Based Learning in Early Childhood Education. In A. Cutter-Mackenzie, S. Edwards, D. Moore, & W. Boyd, *Young Children's Play and Environmental Education in Early Childhood Education* (pp. 9–24). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-03740-0_2

More Than a Score. (2017). *Assessment: The Alternative*. More Than a Score. Retrieved from https://morethanascorecampaign.files.wordpress.com/2017/03/more-than-a-score-12pp.pdf

Moss, P. (2014). *Transformative change and real utopias in early childhood education: a story of democracy, experimentation and potentiality*. London ; New York, NY: Routledge.

Moyles, J. (2010). *The Excellence of Play*. Maidenhead: Open University Press.

Moyles, J. R. (2012). *A-Z of play in early childhood*. Maidenhead, Berkshire, England: Open University Press.

Moyles, J., & Worthington, M. (2011). The Early Years Foundation Stage through the daily experiences of children. *TACTYC*, *Occasional Paper No. 1*.

Multimodal literacy. (2003). New York: P. Lang.

Neegaard, H. R., & Hov, A. M. (2015). Using GoPro action cameras on preschool children in outdoor research. Presented at the EECERA, Universitat Autónoma de Barcelona, Barcelona, Spain. Retrieved from http://www.eecera.org/custom/uploads/2016/09/barcelona-2015.pdf

New Zealand, Ministry of Education. (1996). *Te Whāriki: he whāriki mātauranga mō ngā mokopuna o Aotearoa - Early Childhood Curriculum Guidelines*.

Norris, S. (2002). The implication of visual research for discourse analysis: transcription beyond language. *Visual Communication*, *1*(1), 97–121. https://doi.org/10.1177/147035720200100108

Norris, S. (2004). *Analyzing multimodal interaction: a methodological framework*. New York, NY: Routledge.

Norris, S. (2011). Three hierarchical positions of deictic gesture in relation to spoken language: a multimodal interaction analysis. *Visual Communication*, *10*, 129–147.

Nutbrown, C. (2011). *Threads of thinking: schemas and young children's learning* (4th ed). London ; Thousand Oaks, Calif: SAGE.

Nutbrown, C. (2012). *Foundations for Quality: The Independent Review of Early Education and Childcare Qualifications. Final Report*. Department for Education.

Oakley, A. (1981). Interviewing Women: A Contradiction in Terms. In H. Roberts (Ed.), *Doing Feminist Research*. London: Routledge.

Ochs, E. (1979). Transcription as Theory. In *Developmental Pragmatics* (pp. 43–72). New York: Academic Press.

OECD. (2016). *PISA 2015 - Results in Focus*. OECD.

O'Halloran, K. L. (Ed.). (2004). *Multimodal discourse analysis: systemic-functional perspectives*. London ; New York: Continuum.

Opie, I. A. (1993). *The people in the playground*. Oxford ; New York: Oxford University Press.

Opie, I., & Opie, P. (1959). *The Lore and Language of Schoolchildren*.

O'Toole, L. M. (2011). *The Language of Displayed Art* (1st ed). New York: Routledge.

Pahl, K. (1999). *Transformations - meaning making in nursery education*. Stoke-on-Trent: Trentham Books.

Pahl, K. (2008). Looking with a different eye: creativity and literacy in the early years. In J. Marsh & E. Hallet (Eds.), *Desirable Literacies: Approaches to Language and Literacy in the Early Years* (2nd ed., pp. 140–161). London: Sage.

Pahl, K., & Rowsell, J. (Eds.). (2006). *Travel notes from the new literacy studies: instances of practice*. Clevedon [England] ; Buffalo: Multilingual Matters.

Paley, V. G. (1981). *Wally's stories*. Cambridge, Mass: Harvard University Press.

Paley, V. G. (2004). *A child's work: The importance of play and fantasy*. Chicago: University of Chicago Press.

Palmer, S. (2006). *Toxic childhood: how the modern world is damaging our children and what we can do about it*. London: Orion.

Papert, S. (1993). *Mindstorms: children, computers, and powerful ideas* (2nd ed). New York: Basic Books.

Parten, M. (1932). Social participation among preschool children. *Journal of Abnormal and Social Psychology*.

Pellegrini, A. D. (1989). Categorising children's rough and tumble play. *Play and Culture*, *2*, 48–51.

Pellegrini, A. D., & Boyd, B. (1993). The Role of Play in Early Childhood Development and Education: Issues of Definition and Function. In B. Spodek (Ed.), *Handbook of Research on the Education of Young Children* (pp. 105–121). New York: Macmillan.

Pellegrini, A. D., & Smith, P. K. (1998). Physical Activity Play: The Nature and Function of a Neglected Aspect of Play. *Child Development*, *69*(3), 577–598. https://doi.org/10.1111/j.1467-8624.1998.tb06226.x

Piaget, J. (1936). *Origins of Intelligence in the Child*. London: Routledge and Kegan Paul.

Piaget, J. (1945). *Play, Dreams and Imitation in Childhood*. London: Heineman.

Piantanida, M., & Garman, N. B. (1999). *The Qualitative Dissertation* (2nd ed). Thousand Oaks, Calif: Corwin.

Pink, S. (2007). *Doing Visual Ethnography* (Second Edition). London: Sage.

Pink, S. (2011). Multimodality, multisensoriality and ethnographic knowing: social semiotics and the phenomenology of perception. *Qualitative Research*, *11*(3), 261–276. https://doi.org/10.1177/1468794111399835

Plowman, L., & Stephen, C. (2008). The big picture? Video and the representation of interaction. *British Educational Research Journal*, *34*(4), 541–565.

Plowman, L., Stephen, C., & McPake, J. (2010). *Growing up with technology: young children learning in a digital world*. London ; New York: Routledge.

Postman, N. (1994). *The disappearance of childhood* (1st Vintage Books ed). New York: Vintage Books.

Pratt, C. (1948). *I Learn From Children*. New York: Simon and Schuster.

Price, S. (2013). Tangibles: Technologies and Interaction for Learning. In S. Price, C. Jewitt, & B. Brown (Eds.), *The Sage Handbook of Digital Technology Research* (pp. 307–325). London: SAGE.

Prior, P. (2005). Moving multimodality beyond the binaries: A response to Gunther Kress' 'Gains and Losses'. *Computers and Composition*, *22*(1), 23–30. https://doi.org/10.1016/j.compcom.2004.12.007

Prosser, J. (1998). The Status of Image-based Research. In J. Prosser (Ed.), *Image-based Research* (pp. 97–112). London: Falmer Press.

Prosser, J. (2000). The moral maze of image ethics. In H. Simons & R. Usher (Eds.), *Situated Ethics in Educational Research*. London: Routledge Falmer.

Quinn, S. F. (2013). Froebel's Gifts. *Froebel College, University of Roehampton*.

Ranz-Smith, D. J. (2007). Teacher Perception of Play: In Leaving No Child Behind Are Teachers Leaving Childhood Behind? *Early Education & Development*, *18*(2), 271–303. https://doi.org/10.1080/10409280701280425

Reed, T., & Brown, M. (2000). The Expression of Care in the Rough and Tumble Play of Boys. *Journal of Research in Childhood Education*, *15*(1), 104–116. https://doi.org/10.1080/02568540009594779

Reifel, S., & Greenfield, P. (1982). Structural Development in a Symbolic Medium: The Representational Use of Block Constructions. In G. Forman, *Action and Thought from sensorimotor schemes to symbolic operations* (pp. 203–233). New York: Academic Press. Retrieved from http://greenfieldlab.psych.ucla.edu/Grammar_of_Action,_neuroscience_and_misc._files/reifelgreenfield1982.pdf

Rescue Our Schools. (2017). *Our Manifesto*. Retrieved from https://rescueourschools.co.uk/our-manifesto/

Rinaldi, C. (2006). *In Dialogue with Reggio Emilia – Listening, Researching and Learning*. Abingdon: Routledge.

Roberts, C. (1997). The Politics of Transcription; Transcribing Talk: Issues of Representation. *TESOL Quarterly*, *31*(1), 167–172.

Roberts-Holmes, G. (2015). High Stakes Assessment, Teachers, and Children. In D. Wyse, R. Davis, P. Jones, & S. Rogers (Eds.), *Exploring Education and Childhood: From current certainties to new visions* (pp. 71–82). London: Routledge.

Roberts-Holmes, G., & Bradbury, A. (2016). Governance, accountability and the datafication of early years education in England. *British Educational Research Journal*, *42*(4), 600–613. https://doi.org/10.1002/berj.3221

Robson, C. (2002). *Real World Research* (Second Edition). Hoboken: Wiley.

Rogers, S. (2013). The Pedagogization of Play in Early Childhood Education - A Bernsteinian Perspective. In O. F. Lillemyr, S. Dockett, & B. Perry, *Varied Perspectives on Play and Learning: Theory and Research on Early Years Education* (pp. 159–174). Charlotte, NC: Information Age Publishing.

Rogers, S., & Evans, J. (2008). *Inside role-play in early childhood education: researching young children's perspectives*. London ; New York: Routledge.

Rogers, S., & Lapping, C. (2012). Recontextualising 'Play' in Early Years Pedagogy: Competence, Performance and Excess in Policy and Practice. *British Journal of Educational Studies*, *60*(3), 243–260. https://doi.org/10.1080/00071005.2012.712094

Rogoff, B. (1990). *Apprenticeship in thinking: cognitive development in social context*. New York: Oxford University Press.

Rogoff, B. (2003). *The cultural nature of human development*. Oxford [UK] ;a New York: Oxford University Press.

Rogoff, B., Mistry, J., Goncii, A., & Mosier, C. (1993). Guided participation in cultural activity by toddlers and their caregivers. *Monograph of the Society for Research in Child Development*, *58*(8).

Rowe, D. (1998). The literate potentials of book-related dramatic play. *Reading Research Quarterly*, *33*(1), 10–35.

Rowsell, J. (2011). Carrying my family with me: artifacts as emic perspectives. *Qualitative Research*, *11*(3), 331–346. https://doi.org/10.1177/1468794111399841

Rubin, K. H. (1980). Fantasy play: its role in the development of social skills and social cognition. In K. H. Rubin (Ed.), *Children's Play* (pp. 69–84). San Francisco: Jossey-Bass.

Rubin, K. H., Watson, K. S., & Jambor, T. W. (1978). Free-Play Behaviors in Preschool and Kindergarten Children. *Child Development*, *49*(2), 534. https://doi.org/10.2307/1128725

Sakr, M., Jewitt, C., & Price, S. (2014). The Semiotic Work of Hands in Scientific Enquiry. *Classroom Discourse*, *5*(1).

Sakr, M., Jewitt, C., & Price, S. (2016). Mobile Experiences of Historical Place: A Multimodal Analysis of Emotional Engagement. *Journal of the Learning Sciences*, *25*(1), 51–92. https://doi.org/10.1080/10508406.2015.1115761

Saussure, F. de. (1983). *Course in General Linguistics* (3. impr). London: Duckworth.

Sawyer, R. K. (2003). Levels of Analysis in Pretend Play Discourse: Metacommunication in Conversational Routines. In D. E. Lytle (Ed.), *Play and Educational Theory and Practice* (pp. 137–157). Westport, CT: Praeger.

Sawyer, R. K. (2016). *Pretend Play as Improvisation: conversation in the preschool classroom.* Place of publication not identified: PSYCHOLOGY Press.

Schieffelin, B. B., & Ochs, E. (Eds.). (1986). *Language socialization across cultures*. Cambridge [Cambridgeshire] ; New York: Cambridge University Press.

Schofield, J. W. (1989). Increasing the generalizability of qualitative research. In E. W. Eisner & A. Peshkin (Eds.), *Qualitative Inquiry in Education: The Continuing Debate*. New York: Teachers College Press.

Scollon, R., & Wong Scollon, S. (2003). *Discourses in place: language in the material world*. London: Routledge.

Scuola Comunale Dell'Infanzia Diana. (2012). *I Bambini e l'Ambiente Digitale - Prima Parte / Children and the Digital Environment - First Part*. Reggio Emilia: Reggio Children.

Seale, C., & Silverman, D. (1997). Ensuring rigour in qualitative research. *The European Journal of Public Health*, *7*(4), 379–384. https://doi.org/10.1093/eurpub/7.4.379

Silver, C., & Patashnik, J. (2011). Finding Fidelity: Advancing Audiovisual Analysis Using Software. *Forum: Qualitative Social Research*, *12*(1), Art. 37.

Simons, H., & Usher, R. (2000). *Situated Ethics in Educational Research*. London and New York: Routledge Falmer.

Simpson, M., & Tuson, J. (2003). *Using Observations in Small-Scale Research*. Edinburgh: Scottish Council for Research in Education.

Siraj-Blatchford, I. (2014). Early Childhood Education (ECE). In T. Maynard & N. Thomas (Eds.), *An Introduction to Early Childhood Studies* (pp. 172–184). London: SAGE.

Siraj-Blatchford, I., Sylva, K., Muttock, S., Gilden, R., & Bell. (2002). *Researching Effective Pedagogy in the Early Years*. Nottingham: Department for Education and Skills.

Siraj-Blatchford, J. (2015). 'But what does it do?' Information and Comunications Technology (ICT) in the Early Years: An Emergent Approach. In D. Whitebread & P. Coltman (Eds.), *Teaching and Learning in the Early Years: Fourth Edition* (pp. 294–310). London: Routledge.

Skolverket. (2010). *Curriculum for the preschool Lpfö 98: revised 2010*. Stockholm: Skolverket.

Slembrouck, S. (2007). Transcription — the extended directions of data histories: a response to M. Bucholtz's 'Variation in Transcription'. *Discourse Studies*, *9*(6), 822–827. https://doi.org/10.1177/1461445607082582

Smilansky, S. (1968). *The Effects of Sociodramatic Play on Disadvantaged Preschool Children*. New York: John Wiley and Sons, Inc.

Smith, N. R. (1979). Developmental origins of structural variation in symbol form. In N. R. Smith & M. B. Franklin (Eds.), *Symbolic function in childhood* (pp. 11–26). Hillsdale, N.J: Lawrence Erlbaum Associates.

Smith, P. K. (2005). Social and pretend play in children. In A. D. Pellegrini & P. K. Smith (Eds.), *The Nature of Play* (pp. 173–209). New York, NY: Guilford Publications.

Smith, P. K. (2010). *Children and play*. Malden, MA: Wiley-Blackwell.

Stake, R. (2000). Case Studies. In N. Denzin & Y. Lincoln (Eds.), *Handbook of Qualitative Research*. London: SAGE.

Standards and Testing Agency. (2016). *Early Years Foundation Stage Profile - 2017 Handbook*. Retrieved from https://www.foundationyears.org.uk/files/2017/02/2017_EYFSP_handbook_v1.1.pdf

Stanton, D., & Neale, H. R. (2003). The effects of multiple mice on children's talk and interaction. *Journal of Computer Assisted Learning*, *19*(2), 229–238. https://doi.org/10.1046/j.0266-4909.2003.00023.x

Stein, P. (2003). The Olifantsvlei Fresh Stories Project: Multimodality, Creativity and Fixing in the Semiotic Chain. In C. Jewitt & G. Kress (Eds.), *Multimodal Literacy* (pp. 123–138). New York: Peter Lang.

Stein, P. (2008). *Multimodal Pedagogies in Diverse Classrooms*. London: Routledge.

Stelma, J. (2009). Reporting of transcription practices in ESRC funded research projects. Presented at the British Educational Research Association Annual Conference, University of Manchester: Unpublished.

Stephen, C., & Plowman, L. (2014). Digital Play. In L. Brooker, M. Blaise, & S. Edwards (Eds.), *The Sage Handbook of Play and Learning in Early Childhood* (pp. 330–341). London: SAGE Publications Ltd.

Streeck, J. (1983). *Social order in child communication: a study in microethnography*. Amsterdam ; Philadelphia: J. Benjamins Pub. Co.

Street, B. V. (1984). *Literacy in theory and practice*. Cambridge [Cambridgeshire] ; New York: Cambridge University Press.

Street, B. V. (1995). *Social literacies: critical approaches to literacy in development, ethnography, and education*. London ; New York: Longman.

Sutherland, P. (1992). *Cognitive Development Today: Piaget and his Critics*. London: P. Chapman Pub.

Sutton-Smith, B. (1971). The role of play in cognitive development. In R. E. Herron & B. Sutton-Smith (Eds.), *Child's Play*. New York: John Wiley.

Sutton-Smith, B. (1997). *The Ambiguity of Play*. Cambridge, Mass.: Harvard University Press. Retrieved from http://site.ebrary.com/id/10326093

Sutton-Smith, B., & Kelly-Byrne, D. (1984). The idealization of play. In P. K. Smith (Ed.), *Play in Animals and Humans* (pp. 305–321). Oxford: Basil Blackwell.

Sylva, K., Melhuish, E. C., Sammons, P., Siraj-Blatchford, I., & Taggart, B. (2004). *The Effective Provision of Pre-School Education (EPPE) Project: Technical Paper 12 - The Final Report: Effective Pre-School Education*. London: DfES / Institute of Education, University of London.

Tannock, M. (2014). Physical Play and Development. In E. Brooker, M. Blaise, & S. Edwards (Eds.), *The Sage handbook of play and learning in early childhood* (1st edition, pp. 252–263). Thousand Oaks, CA: SAGE Publications.

Tapestry. (2017). Tapestry Online Learning Journal. Retrieved from https://tapestry.info

Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: combining qualitative and quantitative approaches*. Thousand Oaks, Calif: Sage.

ten Have, P. (2007). *Doing Conversation Analysis - A Practical Guide* (2nd Edition). London: Sage.

The New London Group. (1996). A Pedagogy of Multiliteracies: Designing Social Futures. *Harvard Educational Review*, *66*(1).

Tilley, S. A. (2003). 'Challenging' Research Practices: Turning a Critical Lens on the Work of Transcription. *Qualitative Inquiry*, *9*(5), 750–773. https://doi.org/10.1177/1077800403255296

Tovey, H. (2007). *Playing outdoors: spaces and places, risk and challenge*. Maidenhead: Open University Press.

UN General Assembly. (1989). *Convention on the Rights of the Child*. United Nations.

Unsworth, L. (Ed.). (2008). *Multimodal semiotics: functional analysis in contexts of education*. London ; New York: Continuum.

Van Leeuwen, T. (1999). *Speech, music, sound*. Houndmills, Basingstoke, Hampshire : New York: Macmillan Press ; St. Martin's Press.

Van Leeuwen, T. (2005). *Introducing social semiotics*. London ; New York: Routledge.

Verba, M. (1993). Construction and sharing of meanings in pretend play among young children. In M. Stambak & H. Sinclair (Eds.), *Pretend Play Among 3-Year-Olds* (pp. 1–29). Hillsdale, N.J: Erlbaum.

Vigouroux, C. B. (2007). Trans-scription as a social activity: an ethnographic approach. *Ethnography*, *8*(1).

Vygotsky, L. (1967). Imagination and Creativity in Childhood. *Journal of Russian and East European Psychology*, *42*(1), 7–97.

Vygotsky, L. (1978). Play and Its Role in the Mental Development of the Child. *Soviet Psychology*, *5*, 6–18.

Vygotsky, L. (1986). *Thought and Language* (Translation newly rev. and edited). Cambridge, Mass: MIT Press.

Wagner-Willi, M. (2006). Multidimensional Analysis of Video-Data. In H. Knoblauch, B. Schnettler, J. Raab, & H.-G. Soeffner (Eds.), *Video Analysis: Methodology and Methods* (pp. 143–153). Frankfurt: Peter Lang.

Wengraf, T. (2001). *Qualitative research interviewing: biographic narrative and semi-structured methods*. London ; Thousand Oaks, Calif: SAGE.

White, F., Hargreaves, L., & Newbold, C. (1995). The midday play experiences of five and six year-olds: mixed messages and neglected opportunities. *International Play Journal*, *3*(3), 153–167.

Whitebread, D., & Bingham, S. (2012). School Readiness; a critical review of perspectives and evidence. *TACTYC*, (Occasional Paper No. 2). Retrieved from http://tactyc.org.uk/occasional-paper/occasional-paper2.pdf

Whitebread, D., & Coltman, P. (Eds.). (2008). *Teaching and Learning in the Early Years* (3rd ed.). Routledge.

Wild, M. (2011). Thinking together: exploring aspects of shared thinking between young children during a computer-based literacy task. *International Journal of Early Years Education*, *19*(3–4), 219 231.

Wiles, R., Prosser, J., Bagnoli, A., Clark, A., Davies, K., Holland, S., & Renold, E. (2008). Visual Ethics: Ethical Issues in Visual Research. *ESRC National Centre for Research Methods Review Paper*.

Willett, R., Richards, C., Marsh, J., Burn, A., Bishop, J. C., & Palgrave Connect (Online service). (2013). *Children, media and playground cultures: Ethnographic studies of school playtimes*. Basingstoke: Palgrave Macmillan. Retrieved from http://www.palgraveconnect.com/doifinder/10.1057/9781137318077

Wohlwend, K. (2008). Research Directions: Play as a Literacy of Possibilities--Expanding Meanings in Practices, Materials, and Spaces. *Language Arts*, *86*(2), 127–136.

Wohlwend, K. (2017). The Expression of Multiliteracies and Multimodalities in Play. In F. Serafini & E. Gee (Eds.), *Remixing Multiliteracies: Theory and Practice from New London to New Times* (pp. 179–191). New York, NY: Teachers College Press.

Wohlwend, K. E. (2011). *Playing their way into literacies: reading, writing, and belonging in the early childhood classroom*. New York: Teachers College Press.

Wohlwend, K. E. (2012). The boys who would be princesses: playing with gender identity intertexts in Disney Princess transmedia. *Gender and Education*, *24*(6), 593–610. https://doi.org/10.1080/09540253.2012.674495

Wood, A. (2017). *A School's Lived Architecture: the politics and ethics of flexible learning spaces*. Manchester Metropolitan University, Manchester.

Wood, D., Bruner, J. S., & Ross, G. (1976). The Role of Tutoring in Problem Solving. *Journal of Child Psychology and Psychiatry*, *17*(2), 89–100. https://doi.org/10.1111/j.1469-7610.1976.tb00381.x

Wood, E. (2009). Conceptualising a pedagogy of play: international perspectives from theory, policy and practice. In D. Kuschner (Ed.), *From Children to Red Hatters®: Diverse Images and Issues of Play* (pp. 166–89). Lanham, MD: University Press of America.

Wood, E. (2010a). Developing Integrated Pedagogical Approaches to Play and Learning. In P. Broadhead, J. Howard, & E. Wood (Eds.), *Play and Learning in the Early Years* (pp. 9–26). London: SAGE Publications.

Wood, E. (2010b). Reconceptualizing the play–pedagogy relationship. In L. Brooker & S. Edwards (Eds.), *Engaging Play* (pp. 11–24). Maidenhead: Open University Press.

Wood, E. (2014). Free choice and free play in early childhood education: troubling the discourse. *International Journal of Early Years Education*, *22*(1), 4–18. https://doi.org/10.1080/09669760.2013.830562

Wood, E., & Bennett, N. (1998). Teachers' Theories of Play: Constructivist or Social Constructivist? *Early Child Development and Care*, *140*(1), 17–30. https://doi.org/10.1080/0300443981400103

Wulf, C. (2013). The Search for Multimodality: Mimesis, Performativity, and Ritual. In M. Böck & N. Pachler, *Multimodality and Social Semiosis: Communication, Meaning-Making, and Learning in the Work of Gunther Kress* (pp. 89–92). New York: Routledge.

Yelland, N., Neal, G. A., & Dakich, E. (2008). *Rethinking education with ICT: new directions for effective practices*. Rotterdam: Sense Publishers.

Yin, R. K. (2009). *Case study research: design and methods* (4th ed). Los Angeles, Calif: Sage Publications.

Appendix A: Example Video Log

Clip Name	File Location	Duration (min:sec)	Activity Type	Participants	Location	Summary/Notes
VID00015.AVI	Flip 16.07.12	03:46	Block play/ small world play	Lara, Freddie	Inside, carpet area	L plays with toy animals and large block construction. F joins in, initiating game about “stinging” with insects. Some use of voice/gesture/object/smile in coordinating the play.
VID00016.AVI	Flip 16.07.12	00:51	Block play/Camera play	Freddie	Inside, carpet area	F holds up three blocks, instructs me to “take the picture”, then we discuss video. He asks to see, and we watch it back.
VID00017.AVI	Flip 16.07.12	01:23	Block play/small world play	Tom, (Ben, Archie, Freddie)	Inside, carpet area	T animates toy insect, creates sound effects and moves parts of his construction. Camera also pans to A’s tall construction on top of the shelf of blocks. B and F can be heard discussing construction in the background.
VID00018.AVI	Flip 16.07.12	08:25	Block play/small world play	Freddie, Archie, (Ben)	Inside, carpet area	Both boys balance foam blocks on table-top, some fall, so some discussion/exploration of how to balance. Most play is around “babies” (plastic insects), doors and homes. At one point, F suggest the blocks make a “rocket”. Both then build a tall rocket, with insects inside. They explore the effect of pushing one brick to open another. Ends with A giving one big push and structure collapsing. F pushes over remaining blocks, and A high-fives F.

Appendix B: Institute of Education Ethics Approval

Ms Hazel Croft
Faculty of Children & Learning
Dean of Faculty: Professor Richard Andrews

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17 July 2012

Dear Ms Cowan

Ethics approval

Project title: Examining transcription of video

I am pleased to formally confirm that ethics approval has been granted by the Institute of Education for the above research project. This approval is effective from 9 July 2012.

I wish you every success with this project.

Yours sincerely

+++++++++
Hazel Croft
Research Student Administrator
On behalf of the Faculty of Children & Learning Research Ethics Committee

cc: Dr Diane Mavers
IOE Research Ethics office

Appendix C: Headteacher Information Letter and Consent Form

Institute of Education
London Knowledge Lab
23-29 Emerald Street
London
WC1N 3QS

10th July 2012

Dear [Headteacher Name],

As you will know, I recently took up a PhD studentship at the Institute of Education in London. Throughout my research, I will be looking at how young children communicate in a wide variety of ways beyond speech, and how teachers might observe and document learning when it is manifested in these different forms.

Before the end of the academic year, I would very much like to collect some video data in [Classroom Name] which I can then view, transcribe and analyse as part of my research. The children will not be asked to do anything out-of-the ordinary for this research. A small video camera will be used to collect observations in the same way that a teacher might watch and record children learning through play (eg. drawing, construction, role-play, ICT) as observations for the Learning Journeys. As the children are already used to me watching them and talking to them during their play, I do not expect the research to be intrusive or distressing to them in any way. I will explain my presence to them in simple terms before I start collecting the video, and will give them opportunities to watch and comment on the clips I have recorded.

When I analyse the video, I will be looking particularly at how children communicate in ways such as gesture, gaze, facial expression, mark-making etc. I then hope to devise ways of documenting learning accounting for these different forms of communication. The study is concerned with the children and how they communicate, and is not an evaluation of teachers or particular teaching methods.

I will write to the parents and carers of the Monday to Wednesday cohort explaining my research and asking them to complete a consent form if they are happy for me to include their child (or children) in the project. This has various 'opt-in' and 'opt-out' clauses, depending on the extent to which they give permission for this video to be used outside of the classroom.

The children's names and the name of the school will not be used in conjunction with the data, and parents can indicate if they would prefer their child's face to be blurred out of the video clips. They can withdraw or change consent at any time while I am collecting the data, as can [School Name].

I hope to be in [Classroom Name] during the weeks beginning 9th July and 16th July. There is more information on the project as a whole at http://mode.ioe.ac.uk/ but you can also get in touch with me directly if you have any further questions about my research or how the video will be used. If you are happy for me to carry out the data collection as described, it would be greatly appreciated if you could complete the attached consent form as soon as possible.

I look forward to spending time in [Classroom Name] and continuing my research.

Yours sincerely,
Kate Cowan

CONSENT
Please circle your response:

I have read the attached letter and give consent for Kate Cowan to carry out the research in [Classroom Name] as described:

Yes / No

Name: ……

Signature: ……

Date: ……

If you would like me to email you with any findings or notice of publications relating to this data, please provide your email address:

……..

Appendix D: Class Teacher Information Letter and Consent Form

Institute of Education
London Knowledge Lab
23-29 Emerald Street
London
WC1N 3QS

10th July 2012

Dear [Teacher Name],

As you will know, I recently took up a PhD studentship at the Institute of Education in London. Throughout my research, I will be looking at how young children communicate in a wide variety of ways beyond speech, and how teachers might observe and document learning when it is manifested in these different forms.

Before the end of the academic year, I would very much like to collect some video data in [Classroom Name] which I can then view, transcribe and analyse as part of my research. The children will not be asked to do anything out-of-the ordinary for this research. A small video camera will be used to collect observations in the same way that a teacher might watch and record children learning through play (eg. drawing, construction, role-play, ICT) as observations for the Learning Journeys. As the children are already used to me watching them and talking to them during their play, I do not expect the research to be intrusive or distressing to them in any way. I will explain my presence to them in simple terms before I start collecting the video, and will give them opportunities to watch and comment on the clips I have recorded.

When I analyse the video, I will be looking particularly at how children communicate in ways such as gesture, gaze, facial expression, mark-making etc. I then hope to devise ways of documenting learning accounting for these different forms of communication. The study is concerned with the children and how they communicate, and is not an evaluation of teachers or particular teaching methods.

I will write to the parents and carers of the Monday to Wednesday cohort explaining my research and asking them to complete a consent form if they are happy for me to include their child (or children) in the project. This has various 'opt-in' and 'opt-out' clauses, depending on the extent to which they give permission for this video to be used outside of the classroom.

The children's names and the name of the school will not be used in conjunction with the data, and parents can indicate if they would prefer their child's face to be blurred out of the video clips. They can withdraw or change consent at any time while I am collecting the data, as can [School Name].

I hope to be in [Classroom Name] during the weeks beginning 9th July and 16th July. There is more information on the project as a whole at http://mode.ioe.ac.uk/ but you can also get in touch with me directly if you have any further questions about my research or how the video will be used. If you are happy for me to carry out the data collection as described, it would be greatly appreciated if you could complete the attached consent form as soon as possible.

I look forward to spending time in [Classroom Name] again and continuing my research.

Yours sincerely,

Kate Cowan

CONSENT
Please circle your response:

I have read the attached letter and give consent for Kate Cowan to carry out the research in [Classroom Name] as described:

Yes / No

Name: ……

Signature: ……

Date: ……

If you would like me to email you with any findings or notice of publications relating to this data, please provide your email address:

……..

Appendix E: Parent Information Letter and Consent Form

Institute of Education
London Knowledge Lab
23-29 Emerald Street
London
WC1N 3QS

10th July 2012

Dear Parents and Carers,

As you will know, I recently left [Nursery Name] to take up a PhD studentship at the Institute of Education in London. Throughout my research, I will be looking at how young children communicate in a wide variety of ways beyond speech, and how teachers might observe and document learning when it is manifested in these different forms.

Before your children end their Nursery year, I would very much like to collect some video data in [Classroom Name] which I can then view, transcribe and analyse as part of my research. If you are happy for me to include your child in my project, please complete the attached consent form. This has various 'opt-in' or 'opt-out' clauses depending on the extent to which you give permission for video of your child to be used outside of the classroom.

The children will not be asked to do anything out-of-the ordinary for this research. The video will be used to collect observations in the same way that a teacher might watch and record children learning through play (eg. drawing, construction, role-play, ICT) as observations for the Learning Journeys. As they are already used to me watching them and talking to them during their play, I do not expect the research to be intrusive or distressing to them in any way. I will explain my presence to them in simple terms before I start collecting the video, and will give them opportunities to watch and comment on the clips I have recorded.

The clips will be collected on a small video camera, a tool already used by [Nursery Name] staff to record observations and projects. When I analyse the video, I will be looking particularly at how children communicate in ways such as gesture, gaze, facial expression, mark-making etc. I then hope to devise ways of documenting learning accounting for these different forms of communication.

The children's names and the name of the school will not be used in conjunction with the data, and you can indicate if you would prefer for your child's face to be blurred out of the video clips. You can withdraw or change your consent at any time while I am collecting the data.

I hope to be in [Classroom Name] during the weeks beginning 9th July and 16th July. There is more information on the project as a whole at http://mode.ioe.ac.uk/ but you can also get in touch with me directly if you have any further questions about my research or how the video will be used. It would be greatly appreciated it if you could return the consent forms as soon as possible.

I look forward to spending time in [Nursery Name] again and continuing my research.

Yours faithfully,

Kate Cowan

CONSENT
Please circle your responses:

Name of child: ……..

I/we have read the attached letter and give consent for Kate Cowan to collect video data of my child in [Classroom Name]
Yes / No

I/we give consent for the video data:
- To be shared with academic colleagues at the Institute of Education ***(Yes / No)***
- To be shared at academic events ***(Yes / No)***
- To be shared in publication ***(Yes / No)***
- To be shared online on the 'MODE' website – http://mode.ioe.ac.uk ***(Yes / No)***

If you have consented to sharing of the data, do you give permission for your child's face to be visible in the video or video stills?

Yes / No*

(*If no, your child's face may be made anonymous through digital blurring, producing line drawings etc.)

Parent/Carer name(s): …….

…….

Parent/Carer signature(s): …….

…….

Date: ……

If you would like me to email you with any findings or notice of publications relating to this data, please provide your email address(es):

……..

……..